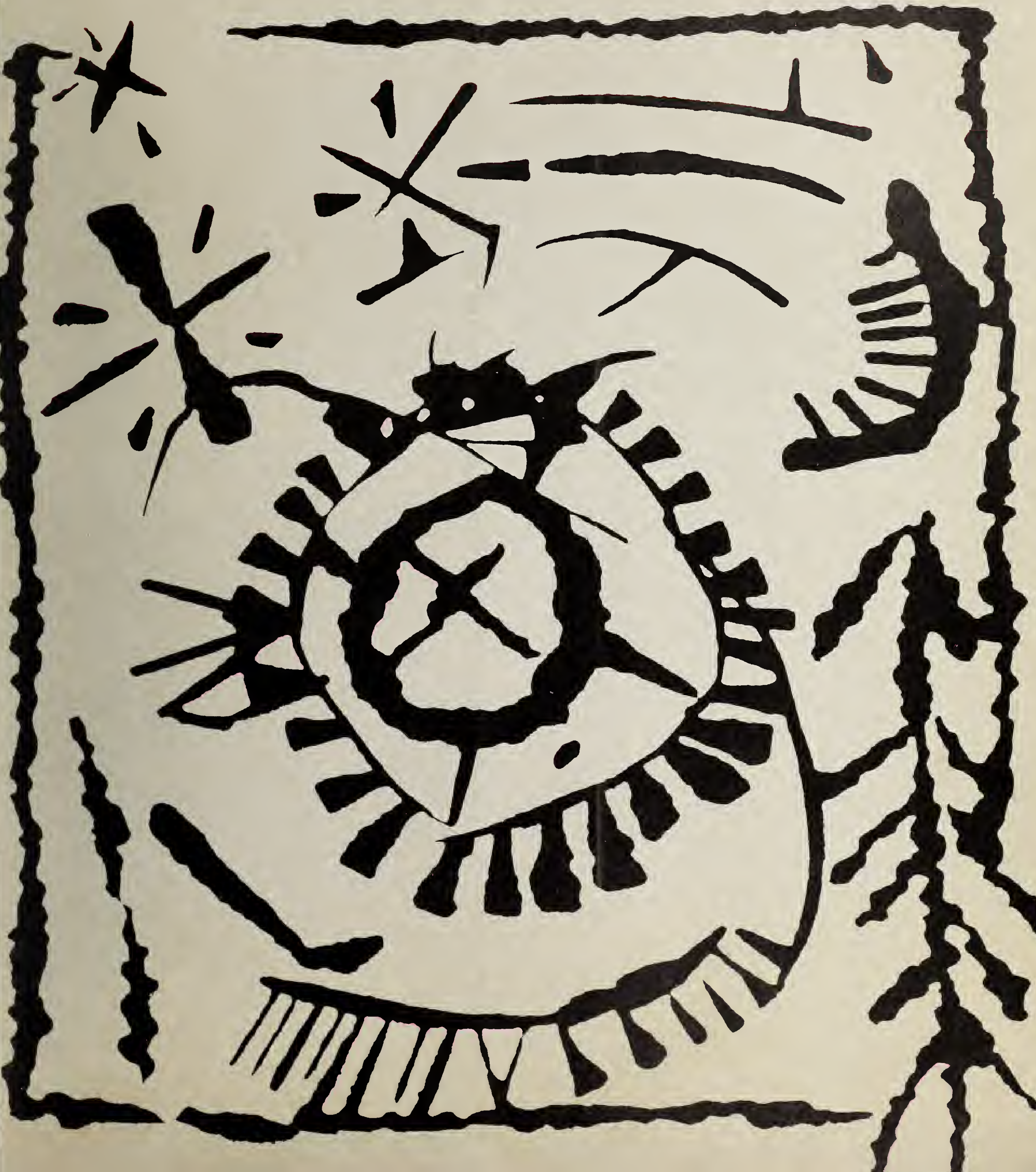
A publication of The Ontario Institute
for Studies in Education

Ideas about Teaching
and Learning

ORBIT 1

Volume 1, Number 1

February 1970



Letters to the editor

Dare we teachers hope that *Orbit* will become a vehicle for our own ideas on education as well as a window for OISE, and that Dr. Jackson means exactly what he says about encouraging a closer relationship between teachers and OISE? May we also hope that the editors of this journal will not be afraid to present ideas and views of a controversial nature?

As a teacher of science, I would like to see a follow-up to Dr. Roberts's article, in the first issue of *Orbit*, dealing, this time, with information on the kind of teacher who is struggling to launch discovery-type courses in Ontario elementary and secondary schools. It might be called 'The Underprivileged Science Teacher.' It might deal with underprivilege in the sense that many elementary science teachers cannot hope to be successful with these laboratory-type courses when they cannot extract as much as $200 a year for equipment and when they operate in a classroom without the proper facilities. The underprivileged also includes the secondary school science specialist who, although better off from the standpoint of money and facilities, just does not have the *time* to organize an extensive laboratory-type program.

In this day and age, when university students are insisting on being consulted on the appointment of staff and the organization of courses, it is only just that elementary and secondary school students should feel they have a right to design their own experiments. There is certainly much that can be said in favor of the heuristic approach to science, and since this method was first advocated at the beginning of the century, it is about time it was tried out.

Accepting, then, the need for discovery-type programs in science, what is holding them up? Again, I suggest, it is a matter of privilege. Rare, indeed, is the elementary school fortunate enough to have a science specialist on its staff, and until we graduate our first three-year B.Ed.s from the teachers' colleges, any ambitious province-wide discovery-type science program will meet difficulties.

The secondary school teacher is underprivileged for not quite the same reasons. With sufficient background to operate as a resource person, he can make a go of an experimental-type program. But will he? Is it fair to expect the secondary school science teacher to struggle with the additional work of organizing and preparing individual experiments with the same time allocation as that allowed his fellow teachers in the other disciplines? Furthermore, unlike his contemporaries in Britain and Europe, he does not have a laboratory technician to wash out the test tubes and set up the apparatus.

If such an article can be written, I suggest it try to answer the following questions, which, to my mind, are very pertinent to the problem of trying to interest teachers in discovery-type programs.

1. Now that summer school HSA programs have been dropped, would it not be possible to institute summer professional training programs with the built-in incentive of the award of a diploma at the end? Or, if the 9-to-4-o'clock teacher regards his summer vacation as sacrosanct, could not something be organized in the evenings or during the winter and Christmas vacations, now that term examinations are out of date?
2. If teachers are not forthcoming for vacation-type courses, would the Department of Education in conjunction with boards of education make it possible to expand the time spent in workshops already organized by OISE, the Department itself, and the various professional organizations?
3. Is there in this province a forward-looking and generous board of education that will lead the way by providing grants to enable Nuffield planners from the United Kingdom and innovators from the United States to communicate their ideas and enthusiasm to teachers during workshop sessions or vacation courses? There is so much these people can give to teachers, and seeding is, to my mind, far the best way of establishing new courses. It is surely unreasonable to expect teachers to launch new programs after reading guidebooks.
4. Are we making the most of OISE and the new Science Centre, both of which have expressed the intention of assisting in the development of education? The fall conference organized by the STAO is leading the way by using the Science Centre as a suitable place for bringing together teachers from all levels of science in our tertiary educational system. Included in this annual conference will be representatives of OISE, school boards, department officials and program consultants.
5. The discovery-type approach for teaching science jumps the traditional and time-honored gaps between elementary, secondary, and university education, and yet, today, universities complain that they don't really know what the secondary schools are doing (they could find out), the secondary schools complain that they don't know what the elementary schools are up to (and they could find out), and all the general public knows about the new look in science is that they can no longer help young George with his homework. Isn't it time for the organization of some kind of get-together – and what better place in Toronto than the Science Centre; what better place in other localities than the local secondary school?
6. All science teachers in Ontario are underprivileged because here it is very difficult to do post-graduate work in an area of specialization – much more difficult, for example, than it is in the arts. York University, with its newly created Diploma in Science, has taken a step that, it is hoped, will launch a province-wide program of M.Sc. course offerings.

Well, will you publish?
Fred Speed
University of Toronto Schools
November 6, 1969

Editor: Yes – but any volunteers to write the article?

I wish to comment on the unfortunate choice of name of your recent publication. Many Ontario teachers are aware of the fact that the Manitoba Department of Highways has huge satellite-shaped garbage cans placed at regular intervals along the Trans-Canada Highway in that province, and in an effort to keep the province clean, has given wide publicity to the theme 'Put Your Garbage into Orbit.'

Yours truly,
Dick Baron
Terrace Bay High School
Terrace Bay, Ontario
November 4, 1969

Recent interest in programmed learning has brought forth many special textbooks. These often use masks and unusual formats in such a way that they become question-and-answer texts for self study. This mask does exactly that, and may be used with any printed text. It might be useful for high school students in particular, as well as for teachers undertaking further study.

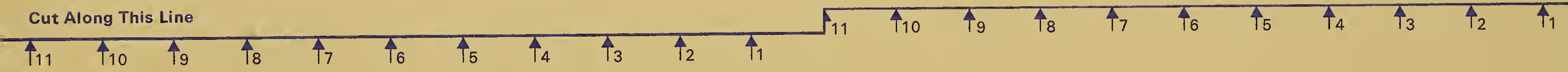
To use the mask, place it over the printed page (as shown in the figure) so as to conceal the text beyond some chosen word. Then place a pencil dot in either margin at the tip of any convenient arrow on the mask, and number this dot with the same number that appears beneath the arrow. Continue in this way, making as few or as many interruptions in the text as you see fit. Later, to study the text, place the mask over the page with the correctly numbered arrow aligned with the numbered dot in the margin. This procedure, of course, relocates the mask in its originally chosen position. Then read the text to the point where it is hidden and see whether you can complete the statement that is partially concealed.

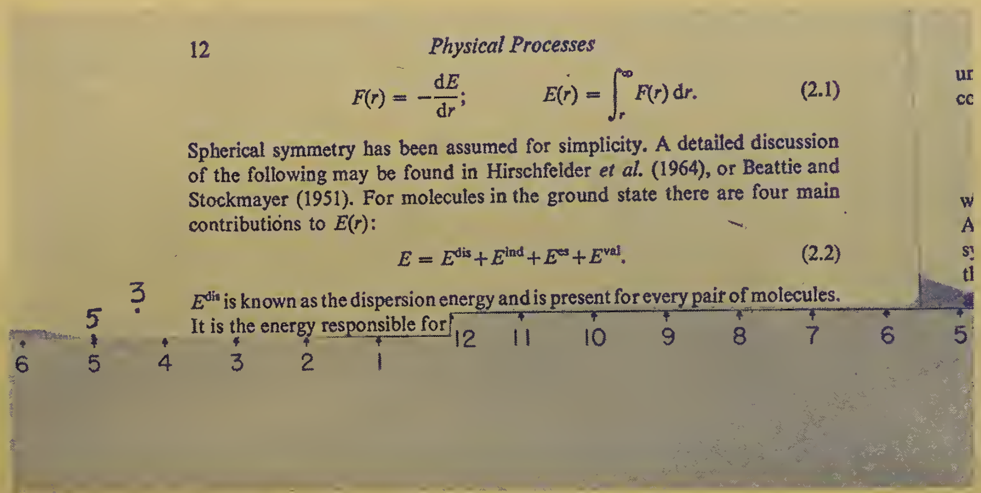
For example, a sentence might read : 'the advantage of the more complex series-shunt circuit is that it balances out the leakage currents of the transistors in order to reduce voltage error.' Locate the mask so that the sentence reads 'the advantage of the more complex series-shunt circuit is . . . ;' then simply ask yourself whether you know the advantage or not. There is nothing to prevent you from making a second interruption after 'in order to . . .'

Various extensions to the idea suggest themselves. After repeated study you may wish to identify those numbered dots that represent particularly troublesome or important points. In studying another language—for example, French—the mask may be used to conceal the ending of a verb ; you would then try to complete the verb from the context. Teachers could suggest to students where to locate the numbered dots, or books could be printed with numbered dots already in the margin.

Further samples of this mask may be obtained by writing to the author, who would appreciate any comments or criticisms.

Cut Along This Line





12 *Physical Processes*

$$F(r) = -\frac{dE}{dr}; \qquad E(r) = \int_r^\infty F(r)\,dr. \qquad (2.1)$$

Spherical symmetry has been assumed for simplicity. A detailed discussion of the following may be found in Hirschfelder *et al.* (1964), or Beattie and Stockmayer (1951). For molecules in the ground state there are four main contributions to $E(r)$:

$$E = E^{dis} + E^{ind} + E^{es} + E^{val}. \qquad (2.2)$$

E^{dis} is known as the dispersion energy and is present for every pair of molecules. It is the energy responsible for

Teaching Aid—

A Mask for Converting Any Text into a Question-and-Answer Text

For Instructions on Use,
See Reverse Side

A.C. Hudson
Radio and Electrical Engineering
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of Canada, Ottawa

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Audience : *Orbit* is published by The Ontario Institute for Studies in Education for everybody involved in or concerned with education.
Although *Orbit* is not written for students, we foresee no harm if copies should fall into their hands–on the contrary !

Content : *Orbit* features information about educational research and development and, in addition to discussing work carried out by OISE and schools across Ontario, draws on material from other Canadian provinces and other countries. Les articles qui intéressent surtout les francophones paraissent en français.

Contributions : We should be glad to receive from readers articles about educational practice, criticisms of past issues of *Orbit*, and suggestions for future issues. Before submitting full-length articles, for which an honorarium will normally be paid, a preliminary letter should be sent to the editor.

Cover Illustration : Lino-cut by Indian child.

Forthcoming Events

February 14-18
American Association of School Administrators Annual Meeting, Atlantic City.

February 18-21
'Reading '70,' a conference to be held at York University as part of York University Reading Week. For details contact Dr. N.B. Baird, The Centre for Continuing Education, York University, 4700 Keele Street, Downsview, Ontario.

March 2-6
American Educational Research Association Annual Meeting, Minneapolis.

March 9-11
Canadian Council for Research in Education 1970 Conference on Educational Research, Chateau Laurier, Ottawa.

March 23-25
Ontario Educational Association Annual Convention, Royal York Hotel and St. Lawrence Hall, Toronto.

April 16-18
Conference on Teacher Education to be held at the Constellation Hotel, Toronto.

April 30-May 2
New Directions in the Philosophy of Education, a conference on the nature and role of Philosophy in Education, will be held at the Guild Inn, Scarborough. Sponsored by the Department of History and Philosophy of Education, OISE.

Vol. 1, No. 1/February 1970
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'There is really no such thing as methodology' — Interview – Northrop Frye, University of Toronto — 4
New French Programs : A Consumer's Guide — H.H. Stern and Alice Weinrib, OISE — 8
Discovery Learning versus Traditional Learning for the Potential Dropout — Solveiga Miezitis and Sharon Lazare, OISE ; Muriel V. Burt, Masonville P.S. — 12
Words in Pictures — 14
Le Travail de Recherche par Equipe en Histoire à l'École Secondaire — Jean-Paul Scott, Chef de la section d'histoire à l'école secondaire Confédération — 16
OISE's Educational Clinic — W. Dockrell, OISE — 17
Creating Effective School Programs — Barr Greenfield, OISE — 20
Canadian Poets on Tape — 23
Starting a Flexible Learning Program at Woodlands Centennial School — John Herriot, OISE, and Robert Weaver, Woodlands School — 24
Teaching Aids from the Community Department of Lands and Forests — 27
Profile of a School 3/Kateri Tekakwitha — 28

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‘THERE IS REALLY NO SUCH THING AS METHODOLOGY’

Northrop Frye,
University Professor at the
University of Toronto,
is interviewed by Johan Aitken.
Mrs. Aitken, a student of Frye's
who has taught English at many
grade levels, is presently a professor
in the English Department at the
University of Toronto's College
of Education.

Photos: Eric Trussler

Aitken : I should like to ask you to comment further on some of your earlier observations which we, as teachers, find 'echoing thus in our minds.' The following remark from the *Educational Courier* is an example :

We cannot have education without incessant repetition and practice, drill, and going over the same things over and over, until they become automatic responses.

This remark was met with a certain repugnance by many school teachers. Why can't we have education without incessant repetition, practice, and drill ?

Frye : I don't know – it's just the way the human animal is constructed. The most miraculous feat of education I think I ever heard of was Gieseking remarking to a friend of mine that piano playing had always come very easily to him – he could always play anything after he had gone over it carefully ten times. Well, what Gieseking could do on a piano is considerably more than most people could do with anything else. The only reason for the repugnance, I think, is that this repetition is so often associated with the subconscious, with drudgery, with the imposing of an external discipline, of somebody doing it and not liking to do it, and so on. You get the same process in, say, learning a foreign language, where one person picks it up in a few weeks and another person slugs at it for years.
The only difference is that the person who picks it up quickly hardly notices the amount of repetition and practice that has been going on in his mind.

Aitken : The connotations of drudgery and conditioning, then, are the ones to avoid ; but no teacher should delude himself that drill need not be done at all.

Frye : Well, I think it's a dangerous delusion to assume that you need not do it at all. There are things like the multiplication table and the alphabet that do require a certain amount of repetition before they are in the mind. The thing to do, of course, is to eliminate the whole atmosphere of 'Write this out fifty times' – that's not what I'm talking about at all.

Aitken : In *The Educated Imagination* you explain why the Bible and classical mythology must form the foundation of a literary training. If we don't know why, that's our fault ; you have told us clearly and often. You have even told us the part of one's anatomy which should first come into contact with poetry.
Now could you suggest *how* a teacher might begin to provide young children with this literary foundation ? Are you supposed to read the story of Ruth to Grade 1 – or what ?

Frye : Well, is the answer really so difficult ? I mean, the stories are there. They are written out by people in the form in which they can be told to children. The story of Ruth the Moabitess is an utterly simple story, and its moral is the same as the moral of the Good Samaritan – that there are human beings outside your own group – and this is not too difficult even for Grade 1 to grasp. I think it's just a matter of choosing materials and also of making sure that you keep pointing out similarities among everything that you do use, so that, whatever you use, the child who is listening to it will be able to make a transition from one to the other and will feel not that they are two completely separate experiences but that they have been linked in some corner of the imagination.

Aitken : You often mention the fact that the cadences and rhythms of the King James Bible come into our language, our speech, our literature, even though at times we are unaware of it. In a watered-down translation, this element would be partially lacking, wouldn't it ?

Frye : I think that's true. Young children tend to become very much attached to certain word orders, and they want the same thing over and over again without permitting very much in the way of change, so there's a strong argument for getting the right words in the right order into their ears as soon as possible.
I noticed that when I was reviewing *The Oxford Book of Nursery Rhymes* and found that the authors had slightly different versions than the ones that I was used to ; I resented it on a very subconscious level every time.

Aitken : You mention in one of your recent articles that you think the teaching lecture will re-establish itself in a short time.
Do you also foresee the day when Grade 8 children may be relieved of stewing in their own intellectual juice in small groups for interminable periods of time, and when the teacher will be reinstated as at least one of the possible sources of knowledge ?

Frye : Well, as the man said when he shot himself with his hunting rifle, that's a slightly loaded question. But I sympathize with you entirely. I think that the seminar method is a thing there's a vogue for, and educators are great on vogues. There's no question that there is a place in the teaching process for people, no matter what age, to be discussing a matter among themselves. The point is, of course, that if you make that the regular teaching program you are throwing a strain on the student which is pretty tough, even for university students, and I think it is absolutely intolerable for children at a Grade 8 level. If you are going to make the process of education anything more than a painful stumbling through one pooling of ignorance to another, you more or less have to find a place simply for communication in its elementary form – as the conveying of information from A to B, where A knows what he is talking about and B doesn't.

Aitken : Your mention of conveying information from A to B reminds me of your recent article in the *Graduate* in which you state :

Education can take place only where there is communication, which means the conveying of information from A to B, or a discussion united by the presence of a specific subject. Such discussion is educational in proportion as it is structured.

Would you comment further on the importance of 'structure' in education ?

Frye : Well, I think rather of a discussion I got into where a colleague of mine afterwards said that most of the questions really meant 'I think you've explained that a bit too clearly ; would you mind clouding it up a little ?'
In the first place, there are a great many false analogies from democracy that get into educational theory, and the notion that for A to tell something to B is undemocratic is about as crude a superstition as one could get hold of. If A is knocking himself out trying to make something clear to B, he is simply offering to share what he has with B and is trying to equalize the whole social situation – and the more efficiently he does that, the better off B is.

Aitken : In the same article you go on to say that 'everything connected with the university, with education, and with knowledge, must be structured and continuous. Until this is grasped, there can be no question of "learning to think for oneself."'

Frye: It seems to me quite obvious that knowledge is consecutive, that there is no such thing as irrelevant information in the sense of information which is unconnected with the next bit of information. So all knowledge is a gradual unfolding of a structure which gets more and more continuous as one learns more and more of it, and the teaching rhythm has to follow this continuity in knowledge. When people talk about unstructured conversation or dialogue in counter-groups, and so forth, they are really engaged in what seems to be a religious rather than an educational activity. They're looking for existential things, but they're not looking for knowledge.

Aitken: If the student's form of participation was thinking about what he hears instead of being ready with an impressive rejoinder, real learning might have more chance to occur.

Frye: Oh, I couldn't agree with you more. I think that when you set up the conditions for this kind of seminar-symposium discussion, what you get is a sort of group monologue.

Aitken: There used to be jokes suggesting that the universities believed English literature had ended with Matthew Arnold. All this has changed now. Recently I taught some graduate students who seemed to think that English literature *began* with Matthew Arnold – or some time later. This seems to me a greater and more serious distortion than the one embodied in the jokes. As you have said, 'the nature of the discipline, not a truant officer, dictates what we should study.' If, however, more and more students are permitted to choose their own courses, what can the elementary and secondary schools do to ensure that these choices will be informed ones?

Frye: Yes, that raises the whole question of the role of historical imagination in the learning process. I remember when I was at Oxford there were three English courses which were arranged in order of prestige. The first, and the most 'prestigious,' as people say now, was mostly Old Norse and Gothic; the second one staggered about as far as the death of Chaucer, or maybe it was 1500; and the third, which was the popular one – the mass-produced one for the Rhodes scholars – went down to 1830, the end of the Romantic movement, and thereby left everyone in a state of great confusion about the date of Wordsworth's *Prelude,* which was written in 1804 and published in about 1850. The theory behind this, however, was something that I sympathized with. The theory was that a cultivated person, such as an Oxford undergraduate was assumed to be, would be reading contemporary literature on his own, that it was not something he ought to be getting academic credit for, and that consequently what he studied was the literary heritage and not the literature that was springing up all around him. Well, I doubt that this is practical pedagogics in North America in 1970, but I still have a lot of sympathy with that view. I feel that to start out learning English literature with what is quoted in T.S. Eliot is a rather barbaric and dubious practice, and that as you go on with that, the cruder it gets. You see, there are always two things about a writer – like Shakespeare, let us say: there is what he meant to his own time, and there is what he means to us. If you concentrate solely on what he means to us, then you are simply kidnapping him and turning him into a twentieth-century writer, which he wasn't. If you keep in mind the other pole, that he was writing for a quite alien civilization and culture with very different standards and assumptions, that is the liberalizing element in your reading. It's introducing you to an unfamiliar cultural milieu.

Aitken: So you're no longer confined by the blinkers of your own time and place?

Frye: Of your own assumptions, yes. Like scolding Shakespeare for not having an enlightened view of Jews, for example.

Aitken: For some reason contemporary literature is often the only kind considered 'relevant.' Could high school teachers do more to infuse an interest in the literature of other ages?

Frye: I think it is true that every age left to itself is extremely provincial and narrow-minded in its cultural assumptions, and an education in other cultures and other periods is the only possible way out of it. Relevance can be an extremely barbaric cry if it's overstated.

Aitken: We seem to be getting away from any prescriptions in the English curriculum. Do you see an end to this?

Frye: Oh yes. I think as long as I've been watching education, it's been a very pendulum-swinging kind of operation. There have been the wildest swings from one extreme to the other. One hopes that, like a cuckoo clock, eventually the pendulum will come down a little bit further and not swing quite so wildly.

Aitken: Would you comment upon educational media, or audio-visual aids as they are often called?

Frye: Well, the oral tradition, the association of literature with the spoken word, is too much *there* ever to be ignored, and that comes partly from the teacher. That's one reason why the lecture is never going to be abolished as the center of education. Recordings can be part of this whole process. It's very interesting to know that some poets are the best readers of their own poetry and other poets are the worst, and that a good many other poets are somewhere in between. I don't know so much about the visual aids. I've seen television programs based on literary themes with scenic effects, and the scenic effects seemed to be for the most part rather churned up. They didn't seem to belong naturally to the subject.

Aitken: High school students flocked to see the film *Romeo and Juliet* because the play was on their course of study. Is there any danger that in the case of a 'first encounter' the director's interpretation could dominate a student's thinking?

Frye: I think that it is certainly true that a dramatist intends his work for the stage and a stage is where that work should be seen. There is perhaps some danger in allowing the film presentation, or even the stage presentation, to dominate one's conception of the play so that one can't really see anything in the printed text except what one saw previously in the film. I didn't see a movie of *Romeo and Juliet* until I was of college age, and then, I remember, Juliet was played by Norma Shearer, who of course was quite old enough and strong enough to have thrown Romeo over her shoulder and walked to Mantua with him. If I had seen that at a very impressionable age, I perhaps might never have got that Juliet out of my head whenever I read the play.

Aitken : Can that happen with picture books ?

Frye : Yes, I think that could happen. A very good example is the Tenniel illustrations to *Alice in Wonderland*. I mean, I wouldn't accept anybody else's Mock Turtle at all.

Aitken : As *Design for Learning* reminds us, 'the catch phrase "creative writing," as it is presently used in the schools, has no precise meaning.' Nevertheless, periods for 'creative writing' are still set aside in all our schools, and during these classes most children put words on paper. Most of what my children wrote had great appeal to adults – perhaps this is what the youngsters intended. What is your view of children writing to order at regular intervals ? In fact, do you think this whole area of so-called creative writing makes sense for young children ?

Frye : It seems to me that using the word 'creative' as an adjective for writing attaches a kind of mystique to the whole operation which is unutterably phoney. It's obvious that one has to learn to write as well as learn to read, and practice in writing is something that I don't see how anybody could object to. I think it should be clear, though, that when young people practice writing, they are actually practicing a rhetorical skill, and what they turn out is going to be the product of a rhetorical skill. I thought your remark was very shrewd, that they produced what they knew adults were going to like. This has just as much to do with what the professional writer does as anything creative. It doesn't need to be attached to the notion that you are somehow fishing in the subconscious.

Aitken : Children's writing is often a matter of accurate diary keeping. Do you think that calling it anything else glorifies it out of all proportion ?

Frye : Yes. I think it illustrates a sort of 'Rousseauish' sense of the natural man which seems to me a little half-baked. The ability to express oneself in painting and writing, and even in composing tunes, ought to be a fairly natural secretion of any child of normal intelligence up to the age of twenty or so. But the question of acquiring the rhetorical skill is a quite different thing from the question of what you are going to do with it after you have acquired it. That's the point at which very many people stop.

Aitken : So often children are asked to write and paint and generally emote Tuesday and Thursday afternoons when they haven't had enough experience, literary or otherwise, to have much to say. Do you think these activities are nevertheless worthwhile ?

Frye : Yes. The developing of the skill has something to be said for it, I think. The question of the profundity of the content is not important at that point. It's just another example of what I mean by the repetition and practice which is in all the learning process.

Aitken : Many people in education decry *content* and emphasize that it's the thinking process and 'thinking about thinking' that matter. What is your impression of all this ?

Frye : Well, I'm very astonished to find that this is still going on in educational circles. I thought it had perished with Sputnik back in 1957, and that educational theorists were now much more aware of the fact that content is absolutely essential in every subject and that no teacher is worth anything except to the extent that he has mastered that content. There is really no such thing as methodology, and there is certainly no such thing as thinking about thinking, except among a very small group of epistemologists. The process of thinking is something that you cannot do at random. It's an acquired habit. It's just like playing the piano. If you are thinking, you can only think about something. What you're thinking about has itself a body – an interconnected body of ideas. You enter into that body, and then you add something new to it. But you can't think at random ; you can't think at will. Consequently there can be no education at all apart from the communication of content.

Aitken : You would agree that knowledge of his own discipline is what inspires the great teacher ?

Frye : It's the only thing that inspires him. If you're teaching mathematics, you get inspired by mathematics. Nobody gets inspired by some vague notion like teaching as an end in itself.

NEW FRENCH PROGRAMS: A CONSUMER'S GUIDE

H.H. STERN AND ALICE WEINRIB

MODERN LANGUAGE CENTER, OISE

When most of us learned French at school, we used a textbook such as *Parlons français* (Whitmarsh and Klinck) or *Cours moyen de français* (Jeanneret, Hislop, and Lake). Today, students may study French without using a textbook at all, or they may be introduced to one at a much later stage. Current approaches to French instruction encourage replacement of the old textbook with a new program. This situation poses a complex problem for French teachers, who must not only assess the validity of the new methods but also compare the value of the many available programs.

Older textbooks and new programs
Although some people suggest that the new programs are revolutionary, there is no strict dividing line between the new and the old.

All the new programs have been produced within the past twelve to fifteen years, and some are literally so new that they are, as yet, incomplete. The textbook of our youth acquired its particular approach and format during the interwar years, whereas the new generation of language courses embodies ideas that are still evolving and have been developed since the Second World War.

The traditional textbook courses expressed certain teaching objectives and convictions, some of which are as valid today as they were thirty or forty years ago. Both the textbook course and the newer courses provide a sequential teaching program that includes a syllabus, teaching materials, and teaching methods; both ensure regular progression in the language and make use of French selections and exercises. In other respects, the new programs differ. They emphasize listening and speaking. Grammatical explanations are usually avoided because the objective is to teach the language not teach *about* the language. 'Pattern' or 'structure' drill often plays an important role, and tapes, filmstrips, flannelgraph figurines, pictures and workbooks are much used teaching aids.

Some courses, usually called 'audiovisual,' place the emphasis on a combination of tapes and visuals. Other courses, usually called 'audiolingual,' stress materials for listening and speaking. Certain newer programs, referred to as 'integrated' courses and making use of a specially designed kit, introduce different emphases and techniques at varying stages in the learning process. The line of demarcation between the categories is thin. Sometimes an older course is dressed up as audiovisual or audiolingual by supplementing the traditional textbook with a few tapes and filmstrips.

If we visit a classroom in which a newer program is in use, we may find the teacher working with a filmstrip projector and a tape-recorder. The students watch scenes depicting characters in everyday situations and listen to dialogue. Even if they have little or no knowledge of French, they are helped by the filmstrip pictures to grasp the conversation. The work, of course, does not end with watching and understanding – this is only an introduction to the language practice that follows.

Voix et images de France (VIF) exemplifies the successful use of the instructional techniques already outlined. This carefully constructed audiovisual course was developed in France more than a decade ago by the Centre de Recherche et d'Etudes pour la Diffusion de Français (CREDIF) following extensive research on basic words and language patterns. The VIF program is popular in Canada and throughout the world, particularly as a means of introducing French to adult learners. It assists students to advance in the mastery of everyday speech.

Another course that has been extremely influential over the past ten years originated in the structural linguistic approach to language analysis[1] and in the methods of wartime language teaching developed in the United States. (The superscript number refers to a note at the end of the article.) This approach and method were later refined and tempered into a theory of instruction by the outstanding American language-teaching theorist Nelson Brooks.[2]

Brooks's philosophy found concrete expression in the work of an enterprising group of language specialists at Glastonbury, Connecticut. Under the direction of Mary Thompson, and with funding by the National Defense Education Act, they undertook to develop and test their own language-teaching materials for high schools. The language courses that resulted were published in the early 1960s under the title *Audio-Lingual Materials* (A-LM). These materials feature dialogues on everyday topics and pattern practice, with emphasis on repetition ('mimicry – memorization') and the subsequent development of habits of speech.

The order of presentation of the skills is always listening and speaking before reading and writing. Although not entirely excluded, use of the mother tongue is limited. Brooks has persuasively described the program aim as the production of 'coordinate bilingualism' – i.e., the independent command of the second language without reference back to the mother tongue.

During the past ten years, linguists and psychologists have challenged many of the presuppositions of A-LM. Nevertheless, the introduction of a great variety of exercises, including pattern drills, has certainly advanced the practice techniques of language teaching. Moreover, organization of taped materials into a course progression, which was pioneered by A-LM, has provided a model for course materials produced in the past few years.[3]

A-LM is American and was designed for high school students. *Voix et images de France* is French and was designed primarily for adults. Another course, *En avant,* is now under production in Britain and is designed for use with pupils aged eight to sixteen.

As the latest to start, *En avant* has benefited from the techniques of its forerunners. It incorporates features of *A-LM, Voix et images de France* and other programs and illustrates what we have called the integrated program. As well as a total approach to learning French, it provides such ancillary materials as puppet films, songs and readers. These materials are closely related to the learning sequence and progression of the course. Like *Voix et images de France, En avant* is audiovisual, but the visuals are deliberately varied from year to year. In one year flannelgraphs are used; in another, wall pictures; in a third, filmstrips. Like *A-LM, En avant* in the early stages based its exercises on pattern drill; but in its later development, *En avant* has moved away from pure drill to 'contextualized drill' and 'productive exercises.'

Canadian course materials

Although the fundamental principles guiding the construction of course materials today have been expressed by Professor W.F. Mackey of Laval University, Canada has been slow in developing newer programs.[4]
This deficiency is now being remedied, and during the past two years, several new Canadian courses have come into widespread use. Of these, *Ici on parle français*[5] and *Le français international*[6] have been adopted by many school systems in Ontario. Both courses are designed for anglophones learning French in a Canadian setting.

Le français international (LFI) has so far been published in two levels ,with a third level about to appear. LFI represents an introductory approach to French instruction for secondary school students or adults. It has been used in Ontario schools as early as Grades 7 and 8 but it is more commonly introduced at the Grade 9 level. The course was produced under the direction of three outstanding Canadian linguists – Guy Rondeau, Jean-Paul Vinay and Pierre Leon.

The core of the method is the systematic presentation of the fundamental structures of French. These structures are taught by means of audiovisual aids (i.e., tapes, flashcards, filmstrips, and slides) and are related to a variety of linguistic contexts and life situations. The form of the language taught is 'standard French' – French that meets standards of correct speech as it exists in France and other French-speaking areas. The characters in the dialogues are portrayed in an essentially Canadian cultural environment.

Although priority is given to speaking the language, reading and writing it are introduced at a relatively early stage.

Ici on parle français (IOPF) was written for Ontario students beginning French in Grade 7. Four levels have been published so far, and a fifth level is forthcoming. The authors are Doris Kerr, French Consultant; Monique Nemni, Director of the French language program at Glendon College, York University; and Morgan Kenney, a supervisor of French. They are residents of Ontario and have had considerable teaching experience.

The cultural content of this course is both Canadian and French. The main emphasis, especially in level one, is the oral mastery of structures. Level two continues the development of the listening and speaking skills and introduces the students to 'la graphie des sons,' recognition reading, sight reading and transcription. In level three, there is increased emphasis on reading and writing–up to 50% of teaching time is suggested for these. At this level, the students are also given some 'observations sur la langue' derived from the structures and vocabulary of the oral core.

Extensive drills and exercises are available to reinforce each stage of development, as well as audiovisual aids (tapes and wall charts), which accompany each level.

These Canadian courses have met with a relatively high degree of success and satisfaction. Teachers are awaiting the publication of new levels for the implementation of long-range sequential French programs.

Selecting a program

The programs outlined above represent only a few of the available instructional methods. There are many others, and for the teacher seeking the best, the variety is bewildering. Nevertheless, although there is no simple consumer's guide, it is possible to give a few hints on how to proceed.

If a school or school system has decided to introduce a new instructional method, the persons responsible for its selection must be given adequate time and facilities to examine the various programs thoroughly. New programs involve a considerable financial investment for the buyer and their use will extend over a period of years. The choice cannot be made lightly.

It is not easy for teachers to know what is available, but efforts are being made to keep them informed. Workshops organized by the Ontario Department of Education have already done much to introduce teachers of French to new courses, and teachers in training are also becoming familiar with them. In addition, the Modern Language Center of OISE has a teaching materials collection which teachers can visit. Here they can discuss the programs with the Center's information officer and make a preliminary selection.

However, it is hardly possible to judge a new program on the basis of inspection alone. Strengths and weaknesses of programs become fully apparent only as one works with them. The problem is further complicated by the unpredictable nature of student response. It is therefore desirable for potential users of a new program to observe it in use and to discuss it with teachers who are thoroughly familiar with it.

The Modern Language Center is planning to establish a panel of teachers throughout the province to act as 'counsellors' to others on the use of new programs.

Teachers who are willing to serve on this panel should consult their principals or supervisors and then write to us stating:

a) what program they use and how long they have used it;
b) whether they are prepared to give opinions to other teachers by letter, telephone, or personal interview;
c) whether it is possible to arrange with them for classroom observation.

But whatever others may say about a program, the teacher must decide himself whether to take program A, B, or C.

Before making a decision, the following are points to consider:

1. Background:
Programs differ in circumstances of production and in their underlying theory. The more the teacher knows about a program, the better he can understand and evaluate it.

2. Linguistic and psychological principles:
The preface, the introduction, or the teacher's manual may give useful information about the nature, basic assumptions, and purposes of the program. Courses are sometimes described as being based on the principles of 'applied linguistics' or being founded on 'the latest scientific advances in linguistics and psychology.' A new program should indeed be based on up-to-date linguistic and psychological studies. The teacher should, however, seek to verify the claims made by the author or publisher.

3. Target group:
Programs are usually composed with certain users in mind, such as an age group or a group possessing a given level of proficiency in French. It is very helpful if the program is clearly geared to a specific group, and there is reason to be suspicious of programs that claim to be useful for all and sundry. The teacher must look at a program from the standpoint of the students with whom it will be used and must decide to what extent it is suited to their needs and the needs of the students who are likely to follow them.

4. Teacher:
Programs usually have a certain type of teacher orientation, and consideration must be given to the demands the program makes upon the teacher and the extent to which he can meet them.

5. Content:
a) *Themes.* The thematic content of a program should be examined for suitability of use with the target group. Evaluation of dialogues, narratives or situations should seek answers to the following questions: Are they natural or contrived? Are they linguistically authentic? What image of French-speaking people do they create? Do they lead to the assumption that French is spoken only by people in France? Do the texts tend to foster narrow national stereotypes? Do they possess literary quality; are they informative; and will they appeal to target groups?
b) *Exercises.* Practice material (exercises and drills) should be directed only towards the development of skills required by language users and should be sufficient to accomplish this purpose.
c) *Grammar.* If grammatical explanations are included, these should be clear, simple, suited to the age and linguistic background of the students, and in keeping with contemporary linguistics.

6. Grading:
A program should be systematic and well-graded in its progression. Ideally, one should be able to find a full list of structures and words showing where they first occur in the program. Otherwise the rate of progression is difficult to assess. Spot checks can be made by picking out units or lessons at random and examining what new items, grammatical and lexical, they present. It is desirable to check the rate of repetition of words and structures in subsequent portions of the program. Programs in which the intake of new items is haphazard and the repetition of items taught earlier is neglected later may be very difficult to teach.

7. Production quality:
Layout, legibility of printed matter, quality of visuals and standard of tape materials should be examined. The extent to which materials will withstand the wear and tear of daily school use must also be considered.

8. Overall assessment:
Lastly, the educational merit of the program as a whole should be assessed, its aesthetic appeal considered, and the acceptability of its basic philosophy and the practicality of its use determined. Cost in capital outlay and running expenses should also be reviewed.

New programs represent an important advance in language instruction. They add new dimensions to the teaching of French and extend the teacher's repertoire. Above all, they allow the active use of language to play a larger role in second-language learning.

In conclusion, a word of warning: it is unrealistic to expect from any program absolute perfection in all respects; deficiencies are bound to be present. No course can be fully adjusted to the ever-changing patterns of education, the changing ideas about language, and the variety of circumstances in which the course is likely to be used.

Teachers are often urged to compensate for weaknesses in a program by employing skill and imagination. Such advice is not always easy to follow. The Modern Language Center at OISE is already looking beyond the present crop of new programs and will soon embark upon a project designed to complement programs, old and new. In a subsequent article, the nature of this undertaking – the French Language Modules Project – will be discussed.

Notes

1. Leonard Bloomfield, *Language* (New York: Holt, Rinehart & Winston, 1933). Approaching language on behaviorist principles, this study became one of the foundations of modern structural linguistics.
2. Nelson Brooks, *Language and Language Learning Theory and Practice* (2nd ed.; New York: Harcourt, Brace & World, 1964).
3. *A-LM* was first published by Harcourt, Brace & World in 1961. A revised edition of this program, which takes into account more recent developments in language teaching, is being prepared, and most components will be available early in 1970.
4. William Francis Mackay, *Language Teaching Analysis* (London: Longmans, 1965).
5. Doris Kerr, Monique Nemni, and Morgan Kenney, *Ici on parle français*, 4 vols. (Toronto: Prentice-Hall, 1966-69).
6. Guy Rondeau, Jean-Paul Vinay, and Pierre Leon, *Le français international*, 2 levels (Montreal: Centre Educatif et Culturel, 1966-69).

Discovery Learning versus Traditional Learning for the Potential Dropout

Solveiga Miezitis and Sharon Lazare
OISE and
Muriel V. Burt, teacher at
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Most teachers agree that gifted children are capable of learning on their own and are stimulated by different approaches to learning – for example, by discovery and project-oriented approaches. There is much less agreement, however, about whether such approaches can be employed profitably with pupils in terminal classes. Such pupils, it is felt, are merely 'putting in time,' and little can be accomplished with them academically.
If this is so, then perhaps much might be gained if teaching efforts were directed more towards arousing interest in learning, especially self-initiated learning, which the new approaches aim to foster.

To test this proposition, an empirical study of the effects of a discovery-oriented approach on low-achieving Grade 8 pupils was conducted in London, Ontario. Two classes, each consisting of twenty pupils, were selected from different schools in the same neighborhood; one was designated as the experimental class, the other was used as a comparison group. The mean I.Q. scores, computed from several group tests, were 104 for the experimental class and 101 for the comparison class – a non-significant difference.

A teacher who had used the discovery approach successfully with average pupils taught the experimental class. Another teacher used the traditional approach with the comparison class. None of the pupils knew of the study.

Teaching approaches

The discovery approach used by the teacher with the experimental class emphasized the following:

Handling materials such as scientific equipment in order to promote curiosity, interest, deftness at manipulation, and cooperation with other pupils;

Discussion among pupils in the classroom in order to clarify reasoning and, through mutual understanding, to intensify the learning experience;

Active involvement of every pupil, every day, in the planning and carrying out of classroom procedures.

Since the pupils had no previous experience with group work or a flexible timetable, they relied heavily at first on guidance from the teacher. Freedom, too, had to be introduced gradually, but within a few months the pupils were learning to respect the group needs as well as their own.

Self-initiated and self-directed learning activities were encouraged by flexibility in classroom procedures and gearing the curriculum to the pupils' common interests, with the subject matter related to life in their own neighborhood.
For example, the class undertook a complete study of the area around the school – the architecture, homes, planning of the streets, types of stores, and nature of the local countryside.

Discussion of and support for unusual ideas through 'practice play' prior to new learning situations also helped to stimulate individual curiosity and enthusiasm in a free learning atmosphere. For example, the study of such geometrical concepts as radius and diameter began with pupils collecting different sorts of balls (baseballs; tennis, ping-pong, and soccer balls), measuring them with string, and trying to find some relationship between the facts they discovered.

Cooperation among pupils and overall cohesion were fostered through class evaluation of its own performance. Through this exercise, pupils soon learned to search for alternative ways of doing things and began to be more critical and to perceive more clearly what a good group could accomplish.

In addition to these areas of emphasis, an attempt was made to revive short- and long-term goals through the regular discussion of hopes, wishes and ambitions as well as the feelings of inhibition that resulted from past dissatisfactions with school and learning experiences.

In the traditional approach used by the teacher with the comparison class, formal teaching of subject matter was emphasized. Pupils spent most of their time at their desks taking notes. There was little scope for handling materials or for class discussion.

Evaluation

Evaluation of the study was carried out by staff at OISE. Two measures to assess changes in motivational characteristics – the Penney and the Haywood scales – and one to assess changes in creativity – the Minnesota tests – were administered to each pupil at the beginning and end of the school year (i.e., in September and May).

The Penney Reactive Curiosity Scale (Penney and McCann, 1964), a paper-and-pencil test consisting of one hundred true-false statements, was developed to measure individual differences in curiosity in children. In this context, curiosity is defined as 'a tendency to approach and explore relatively new situations, to approach incongruous and complex stimuli, and to seek variation in the presence of frequently experienced stimulation.'

The Haywood Choice-Motivator Scale (Hamlin and Nemo, 1953) consists of twenty-two pairs of professions or activities. The subject is required to consider each pair and indicate which of the two he would prefer (e.g., 'Would you rather be a president or a movie star?'). The subject is then asked to indicate one of ten reasons for his choice. Five of the reasons are classified as 'intrinsic' because they depend upon the task as an end in itself (e.g., 'I like excitement and adventure;' 'I could learn more;' 'I like to do hard things'), while the other five are classified as 'extrinsic' because they refer to non-task aspects or to benefits derived from the task (e.g., 'It would be easier;' 'I would have more money'). The score on this test depends upon the number of 'intrinsic' reasons for choice rather than upon the actual choices.

Two verbal and two non-verbal tasks from the Minnesota Tests of Creative

Table 1

Results of Experimental and Comparison Classes on September Tests

Test	Group	Number of Students	Mean Score	Standard Deviation	t-tested significance of results*
Minnesota Tests of Creative Thinking	Experimental Comparison	20 17	172.4 195.6	49.30 67.20	−1.21
Curiosity Scale	Experimental Comparison	19 19	55.4 57.0	6.05 6.21	1.02
Choice-Motivator Scale	Experimental Comparison	17 18	13.0 12.7	3.08 2.21	0.37

*the values obtained for t are not significant

Table 2

Results of Experimental and Comparison Classes on May Tests

Test	Group	Number of Students	Mean Score	Standard Deviation	t-tested significance of results
Minnesota Tests of Creative Thinking	Experimental Comparison	17 19	267.8 198.2	77.30 79.20	2.67*
Curiosity Scale	Experimental Comparison	17 18	60.3 55.1	5.50 7.92	2.34*
Choice-Motivator Scale	Experimental Comparison	18 17	15.0 14.0	2.83 3.71	0.66

* probability < 0.05

Table 3

Differences between September Test and May Test Scores for Experimental and Comparison Group

Test & Group	Number of Students	*Mean Score*		*Standard Deviation*		Difference	t-tested significance of results
		Sept. test	May test	Sept. test	May test		
Minnesota Tests of Creative Thinking							
Experimental	17	177.71	267.82	48.49	77.35	90.11	5.32**
Comparison	16	200.19	204.69	66.58	84.59	4.50	0.30
Curiosity Scale							
Experimental	18	55.44	60.28	6.05	5.49	4.83	5.89**
Comparison	19	56.95	55.05	6.21	7.92	1.89	1.40
Choice-Motivator Scale							
Experimental	17	12.41	14.76	2.70	2.70	2.35	2.86*
Comparison	17	12.77	14.06	2.33	3.82	1.29	1.34

* probability < 0.05
** probability < 0.01

Thinking were selected for this study. On these open-ended tasks, the subject is encouraged to use his imagination, to think of unusual, interesting, and exciting ideas, and to express them in words or drawings. The products are scored for fluency (number of responses), flexibility (diversity of response), originality (unusualness of response), and elaboration (amount of detail in working out the idea).

Results

Three types of comparison were made: scores obtained by each class in the September tests were compared in order to rule out initial differences between the two groups (see table 1); scores obtained by each class in the May tests were compared (see table 2); scores obtained by each class in the September tests were compared with scores obtained by that class in the May tests (see table 3).

The results indicated that there were no significant differences between the two classes at the beginning of the school year on any of the three measures. However, when the two classes were retested at the end of the school year, the experimental class was found to perform significantly better than the comparison class on the Minnesota Tests of Creative Thinking and the Penney Reactive Curiosity Scale. Furthermore, the comparison of the September test scores with the May test scores indicated that the experimental class made significant gains on all three measures, whereas the test performance of the comparison class remained essentially unchanged.

Conclusion

The results suggest that a teaching approach designed to increase pupils' interest and stimulate curiosity can produce a measurable change in a class of potential dropouts whose interest in academic learning is minimal. The permanence of such gains can be determined only by a follow-up study. It would be of considerable interest to find out how many pupils from each of the two classes seek to further their education in an academic or vocational setting and what success they have. Follow-up studies regarding their attitudes toward school would also provide some indication of the personal effects of this experience.

However, to sound a note of caution, it would not be advisable to generalize from these findings until replication studies are carried out to check the effect of the teacher variable.

Teacher evaluation

Muriel V. Burt, teacher of the experimental class:

'This was a strenuous and demanding year but, nevertheless, it was very worthwhile. I feel certain that children need early experiences in making choices about what to study. In order to develop habits of awareness and sensitivity, they need to be encouraged to 'puzzle' about themselves, about others and about their environment – both in school and outside. Time should be allotted daily to appreciative examination of the non-learning concerns that motivate interaction in the classroom. Teachers should discuss with pupils what flexibility and initiative are and how to use them wisely in working freely and constructively together. The teacher who goes into the classroom with the intention of experimenting and who is alert to opportunities to let the child discover *as much as he can* for himself becomes a sort of working opportunist. He is happy to seize the psychological moment for a lesson and eager to relate all subjects to the interests and needs of the child. To teach children as individuals, we must take time to learn to know them as individuals.

The Grade 8 children involved in the experiment did respond *favorably and productively* to the new situation and their curiosity did increase – as the results show. The whole undertaking was exciting enough to make me give up my vice-principalship and go back to the classroom full-time in order to try the same thing at a much earlier grade level.

Words in Pictures

'When working with Indian children in painting and sculpture, I use it as recreation and, if I organize it, it is no longer recreation. The children dictate to me what they want to do. They set their own hook and their own bait, and I just simply tag along. This way the children pour themselves out until they are totally exhausted, and all I do is hand out the materials and gather up the finished products.'

Robert Aller, the self-effacing author of this statement, is a well-known Canadian painter who has spent the past nine years teaching art to Indian children. He now owns one of the largest collections of children's art in Canada, a collection that has been exhibited in many provinces. Currently, he runs

several summer art schools for Indian communities in Ontario, and last summer, together with Francis Kagige, a self-taught professional artist, Aller taught for six weeks at Wikwemikong, Manitoulin Island, as part of a program planned by the departments of Curriculum and Applied Psychology, OISE. Some of the works that they 'gathered up' are shown on these two pages; a more complete selection was on display at the Royal Ontario Museum during December and January.

Aller began working with Indian children at the Alberni Indian Residential School in British Columbia, and found the experience totally different from his years of teaching children in Montreal, Winnipeg and Port Alberni. Indian child artists, he believes, are speaking for a culture 'unbelievably different and remote from our own white urban way of living. Indian child art tells us more about the Indian and his way of life than any amount of words can, for the Indian culture is not essentially a verbal one like ours.'

Aller finds that 'Indian children speak more easily to me through painting because I represent in no way the white man's authority. At Golden Lake, I merely arrived one day and announced my presence by making some plaster casts outside in a sand pile. Soon interested children gathered round and after a while wanted to share the action. It did not take long for word to spread about the strange white man who played in the sand.'

Photographs: Robert Aller

LE TRAVAIL DE RECHERCHE PAR EQUIPE EN HISTOIRE

à l'école secondaire

par Jean-Paul Scott, B.A.
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Welland, Ontario

L'enseignement de l'histoire pour être intéressant et profitable, ne doit pas être routinier, ni basé uniquement sur les exigences de la discipline. Au contraire, il doit être vivant et adapté aux besoins des élèves. Le professeur qui veut intéresser ses étudiants doit donc présenter sa matière de façon à obtenir cet intérêt. Afin d'accomplir ceci, il est nécessaire de recourir à diverses techniques. C'est très bien que de présenter des leçons formelles, mais si le professeur vient abattre sa besogne quotidienne toujours de la même façon, ses élèves se fatigueront et détesteront l'histoire.

De plus en plus, nous devons encourager nos étudiants à procéder selon les méthodes scientifiques. Or, en histoire, ils doivent recourir à différentes sources comme le fait l'historien professionnel. Ils doivent se servir de différents volumes ; mieux encore, ils doivent consulter des documents. Après avoir obtenu les renseignements requis de ces différentes sources, il leur est possible de rédiger un travail personnel.

En plus des travaux de recherches et des leçons formelles, le professeur doit recourir à d'autres techniques telles que les aides audio-visuelles (films, diapositives, disques), excursions, etc. Dans ce travail cependant, je parlerai surtout des travaux de recherche ainsi que des présentations orales en classe.

L'expérience dont il est question dans ce rapport se passe dans les divers niveaux de l'école secondaire Confédération à Welland. Cette institution est une des premières écoles secondaires de langue française récemment établies dans le système ontarien.

Le travail de recherche par équipe, selon notre procédure, porte généralement sur une période importante de l'histoire telle que le règne de Louis XIV, la Révolution française, etc. Après avoir subdivisé une période quelconque, les élèves choisissent le sous-titre qui leur plaît davantage ainsi que les compagnons avec lesquels ils veulent travailler. Dans un milieu où les élèves doivent voyager par autobus, ceci est important : s'ils désirent se rencontrer en dehors des heures de classe pour discuter leur travail, il est bon qu'ils demeurent à proximité les uns des autres. Des groupes de quatre ou cinq fonctionnent bien. D'habitude, deux d'entre eux présentent l'aspect positif du travail tandis que les autres s'efforcent de faire voir l'aspect négatif.

Il est évident que les élèves ne peuvent pas présenter un débat ou un séminaire convenable à moins de recourir à différentes sources. Non seulement doivent-ils obtenir les faits nécessaires des différents volumes qu'ils consultent mais ils doivent constater qu'il existe différentes interprétations de ces faits. De là vient l'importance de fréquenter la bibliothèque scolaire et même les bibliothèques municipales et universitaires. Il est évident que la bibliothèque de l'école est le lieu idéal pour la préparation des travaux.

Pour la présentation des recherches en classe, les pupitres sont disposés en demi-cercle et tous les élèves doivent prendre part à la discussion. Les travaux, dactylographiés et polycopiés par les élèves eux-mêmes, sont distribués la veille. De cette façon, tous les étudiants peuvent prendre connaissance du contenu avant la discussion. Ceux qui dirigent le débat ou le séminaire présentent les "pour" et les "contre" tandis que les autres posent des questions, demandent des explications ou émettent un point de vue différent.

Afin d'éviter des présentations monotones, il est essentiel que les élèves expliquent leur sujet, qu'ils parlent aux autres et qu'ils ne lisent pas un texte à moins que ce soit une citation ou un passage très court. Si le travail est rédigé en forme abrégée, le problème est déjà résolu.

Au cours des débats ou séminaires, tous doivent participer : ceux qui présentent leur travail sont conscients du fait qu'ils réussissent beaucoup mieux si leurs compagnons participent activement. Le professeur peut agir comme chef de la discussion, mais il est préférable qu'un élève agisse comme animateur.

En ce qui a trait à l'évaluation du travail, les élèves y prennent une part active. Ils évaluent leur propre travail en se servant des critères suivants : leurs recherches, la qualité de leur rédaction, la méthodologie, la présentation, la participation des autres ainsi que leur contribution au cours des autres présentations. De plus, chaque élève doit évaluer le travail d'un de ses compagnons en se servant des mêmes critères. Nous essayons d'éviter une évaluation réciproque. Enfin, chaque élève évalue le travail de son groupe. Sur le format que nous utilisons, il y a amplement d'espace pour les remarques personnelles. Plusieurs en profitent pour faire des remarques constructives très valables.

Cette méthode répond à certaines exigences fondamentales de l'enseignement de l'histoire tel que mentionné au préalable. L'étude d'une période quelconque peut toutefois durer trois semaines ou plus, et nous n'avons pas l'intention de la répéter plus que trois ou quatre fois avec chaque groupe au cours de l'année. Enfin, l'évaluation personnelle, d'après notre expérience, tend à être assez élevée.

Il n'en reste pas moins que cette procédure s'avère très intéressante et très profitable. Cependant, il nous semble que l'expérience est plus profitable aux niveaux de 11^e, 12^e et 13^e, et c'est avec ces classes que nous nous proposons de continuer ces expériences d'une façon plus intensive.

1.

OISE's Educational Clinic

W. Dockrell, Director of the Clinic

You can borrow from the Educational Clinic the video tape of a group of distinguished psychologists from all over the English-speaking world discussing intelligence. However, you may have some difficulty in following it, for at some points the discussion is drowned by the shouts of children in the next room. We think this tape illustrates well what goes on at our Clinic.

We try at the Clinic to use the best available methods and the best available concepts to develop improved ways of helping children who are not making satisfactory progress in school. Our title is perhaps misleading, because the main purpose is not to provide a service directly to children in need but to help the schools give these services. Of course, many children come to the Clinic and do receive treatment, but they come to 'teach' the staff and students at the Institute as well as to receive help themselves.

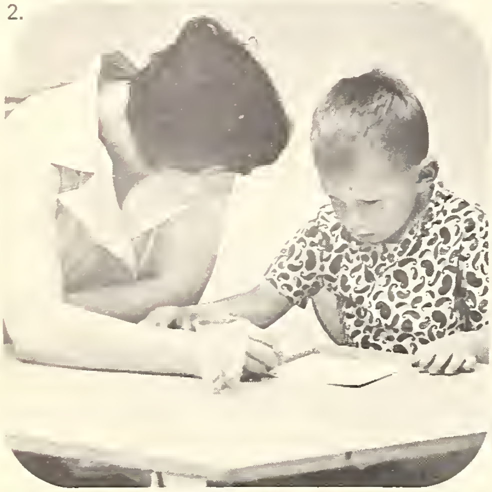
We try to help the schools with such children in three ways : first, by developing new techniques for working with various types of children ; second, by providing specialized training to school staffs ; and third, by conducting studies that will help us to understand the nature and origins of children's problems and ultimately result in better ways of handling them. Many of our programs combine more than one of these elements. A good example is our reading program. It is often argued that children in one-room rural schools don't need remedial teaching, and that if Grade 1 in larger schools were properly taught there would be no need for reading clinics. Unfortunately, the small rural school does no better by its pupils than the larger schools. For example, I interviewed some time ago an intelligent boy who had spent six years in Grade 1 in a rural school. He had a specific reading difficulty that his teachers had not recognized, but even if they had recognized his problem, they would not have been equipped to deal with it.

Some ten percent of all school children have such difficulty learning to read that they cannot complete a normal school program. Most of these children are not intellectually slow or emotionally disturbed, but they have failed to benefit from regular instruction. At the Educational Clinic such children are studied on an individual basis, under the supervision of Dr. Hildred Rawson, and their problems analyzed. New procedures are devised and combined with techniques developed elsewhere. As a result of this research, Dr. Rawson and her colleagues have now developed techniques that are effective in a one-to-one clinical situation for children who have reading difficulties. Since work on this basis is very expensive and time-consuming, her team is now adapting these procedures to group work in the schools. The first stage of this project has been completed and initial trials in a suburban community have shown positive results. A larger study is now planned to

1. Individual instruction – Dr. Hildred Rawson's reading program
2. Dr. Dorothy Shipe's remedial program is for children with special learning disabilities
3. A class in the Conceptual Skills project – photographed through a one-way screen

Photographs 1 and 3 : R. Taschereau, Media Services, OISE
Photograph 2 : John McNeill

2.



3.

make sure that children with difficulties can be helped by group instruction in their own schools.

In our reading program, we also train reading specialists to work in the schools. These graduate students watch the Clinic team testing and teaching and observe the interviews with parents and teachers. They are drawn gradually into the teaching program, and as they develop confidence, they are given increasing responsibility for children referred to the Clinic. Their supervisors then observe them from behind the one-way screen and are able to make suggestions and provide materials unobtrusively. Video tapes allow staff and students to observe themselves at work and to make corrections in their procedures.

The Clinic also works with a large and poorly understood group of children who are categorized as having special learning disabilities. It is by no means clear that all children described in this way have the same problem ; nor are any of the existing remedial procedures always effective. Dr. Dorothy Shipe and her colleagues conducted a study to look at both these issues – the classification and the treatment. Because prevention is better than cure, this program was concerned with preschool children. A number of children who had symptoms frequently associated with special learning disabilities were located. They were subjected to an extensive battery of tests, and those who were normal (there were a number who appeared to the team to be quite normal) or who were suffering from some other clearly recognizable handicap were eliminated from the study. The others were brought into the Clinic regularly to take part in either a specially devised remedial program or a traditional kindergarten. Halfway through the program, the two groups were reversed so that all the children had some opportunity to benefit from the new program. The design of the program enabled the members of Dr. Shipe's team both to modify techniques as they went along and to evaluate them at the end. The early stages have been analyzed, but the final test will be the success of these children in their school lives. Consequently, follow-up studies of the children are being conducted to see whether the improvements recorded during their attendance at the Clinic will continue in their regular schools.

The largest teaching program at the Clinic is devoted to the preparation of counsellors, most of whom are teachers studying towards an M.Ed. or Ph.D. degree with specialization in counselling. We have an arrangement with certain city schools to send youngsters to the Clinic either to discuss their problems or to examine their plans for the future. All interviews are recorded on tape so that the student counsellors may review them with their clinical supervisor. We can be sure in this way that an experienced and qualified counsellor will express judgment on all the interviews and that no misunderstandings will arise. The graduate student, too, gets the benefit of his supervisor's advice on how to proceed next. The video tapes help both the staff and the students to develop their skills. Though the presence of the recording equipment must have some effect, the youngsters seem less disturbed by the cameras and microphones than the staff.

Perhaps children are now growing up in a world where these media are taken for granted. While video tapes do not allow us, in Burns's phrase, 'to see oursels as others see us,' they do enable us to see ourselves as the TV camera sees us.
And this cold objective eye can be helpful to the student counsellor in evaluating his interviewing technique. The school psychologist is often the teacher's first line of defense. When a teacher meets a child who isn't learning in his classroom, he can consult the school psychologist. By an interview with the child and his parents, by discussion with the teachers, and by testing, the school psychologist attempts to understand the child's learning difficulty. In some cases, the psychol-

ogist can suggest to teachers and parents methods of working with the child that are of value in a particular set of circumstances. In other cases, the youngster may need help outside the school. The school psychology program at the Institute uses the Clinic in the same way as the counsellor training program. The students get their initial experience in a supervised situation before going into the schools for practical training.

Many of the more difficult children do not attend school at all. The Clinic is concerned with these children too. There are, for example, some children who don't learn to communicate : they don't seem able to distinguish between people and inanimate objects ; or if they can, they seem to prefer the predictability of the inanimate. We have therefore instituted at the Clinic a project to devise appropriate training procedures for parents so that they, in turn, can help their children into fuller contact with the world.

Severely retarded children may also be too difficult for the schools to help.
Indeed, there is much about these children that we do not understand. One of the Clinic's research projects in this area entails the investigation of the hyperactive child. Dr. John Fotheringham and his colleagues are trying to devise a situation that will help the hyperactive child to focus his attention and integrate his behavior so that he has a better chance to learn.

We expect no immediate spectacular development from this kind of program : it is part of the long painstaking task of building up knowledge that will eventually allow us to provide a fuller and more satisfactory life for the retarded.

The Clinic also provides facilities for a number of projects initiated by other departments in the Institute, especially when children need to be observed in a way that is difficult in the normal classroom. We have observation rooms with one-way screens whereby children can be watched without disruption of the normal classroom procedures. Video and audio tapes can be made so that a fleeting moment of classroom interaction can be preserved for later analysis and modification of procedures. For example, the conceptual skills project last year had two groups of children attending the Clinic daily. Both groups had some language problems : one because the language of the home was not English ; the other because the language in the home, though English, was restricted. The projects have now reached the stage where they can be tried out on a larger scale in the schools. Other projects that make limited use of the Clinic facilities include analysis of video-taped lessons (microteaching studies), group dynamics, and research into differences in the pattern of mother/ child interaction in specific groups.
New teaching and research proposals currently being developed within the Institute will make additional demands on the Clinic.

Among the proposals being considered are a continuing counselling program that will provide additional opportunity for research ; full-time programs of instruction for classes of handicapped children of school age that will allow the initial stages of program development to be carried on under close supervision ; and laboratory studies of the effects of restricted and stimulating environments on the attention span of retarded children. Inevitably, the program in the Clinic can reach directly only a small proportion of the children who need help ; the real service of OISE's Educational Clinic is the preparation of a specialist staff for work in the schools and the development of new instructional programs and procedures.

Principals and teachers who want specific information about any of the Clinic programs should write to :
The Educational Clinic, OISE
76 Avenue Road, Toronto 181
Visits for individual teachers can often be arranged.

CREATING EFFECTIVE SCHOOL PROGRAMS

Barr Greenfield
Department of Educational Administration, OISE

In the old days, it was all so simple. There was a fixed curriculum ; there was an examination at the end ; the rules were set ; and the few decisions that had to be made were based very largely on precedent. Now all this is changing – changing, we believe, for the better – but the enormous number of educational possibilities that are now open both to school systems and to schools can easily lead to chaos. Clearly one of the main jobs facing us today is to systematize these possibilities into a logical framework so that educational objectives, the way to meet these objectives, and the areas of responsibility are unambiguously defined. In this article, I have restricted my discussion to the development of a framework for the creation of school programs. Much of what I have written may seem obvious, but in the present state of confusion, it is often necessary to go back to basics.

The school system

The design of any school program depends initially on a clear statement of educational objectives by the school system – by the board of education, or whoever the overall policy-maker may be. Such questions must be asked as, Are the objectives to develop in pupils academic skills, vocational skills, good citizenship, patriotism, happy disposition, moral rectitude, or what ? Are some of these objectives more important than others ? And, if so, what are the priorities ?

Most broad educational objectives derive from social and individual needs. Considered statements such as those found in the Hall-Dennis Report on aims and objectives for Ontario schools provide suitable examples of the broad purposes that school programs might serve. This report generally endorses the purposes of education outlined in the *Report of the Royal Commission on Education in Ontario* (1959) :

a) to develop the capacity to apprehend and practise basic virtues,
b) to develop the power to think clearly, independently and courageously,
c) to develop the talent to understand the views of others and to express one's own views effectively,
d) to develop competence for a suitable occupation,
e) to develop good health,
f) to develop aptitudes for recreation,
g) to develop characteristics for happy family relationships,
h) to develop the concept that education is a continuing process beyond the school.

Once agreed on educational objectives, it is then the responsibility of the school system to establish several broad programs that will achieve these objectives – for example, an Intellectual Skills Program, an Environmental Studies Program, an Individual and Social Development Program, and an Ethical Values and Moral Development Program. While the objectives underlying these programs may be mutually supportive, differentiation between them is essential if individual schools are to develop their own specific programs within the broader context. Briefly, the programs provide goals and minimum standards for all schools that are managed by the system.

Finally, it is the responsibility of the school system to relate its broad programs to special areas of study – reading, mathematics, literature, history, and so on (see fig. 1).

In all these operations, the more precisely each stage is worked out, the more likely it is that the ultimate educational objectives will be achieved. At the same time, the framework set up by the school system must provide realistic goals for individual school programs.

The individual school

Once the school system has established objectives and the broad programs to achieve them, the task of creating specific instructional programs devolves upon individual schools. To consider, for example, the broad programs outlined above, schools might organize instructional programs around them as follows :

a) Intellectual Skills Program
–communication skills
–concept formation
b) Environmental Studies Program
–understanding man and his world
c) Individual and Social Development Program
–personal development, understanding self
–vocational training
d) Ethical Values and Moral Development Program
–understanding local, national and international affairs
–social responsibility and action
–compassion, empathy, humanity

In view of the wide variations in the needs and abilities of pupils and of the contrasts between communities, schools provide the best location for the development of instructional programs. It is there, in the schools, that teachers confront the reality of instructional problems and make decisions to solve them. Certainly they can be helped by educational research and, as outlined at the end of this article, by computer systems ; but there is no substitute for program building and testing in the schools themselves. The task for principals and teachers, then, is a formidable one. There are so many instructional programs or possible combinations of programs from which to choose. There are the costs to be considered. There is never enough time. Most critical of all, perhaps, external supervision of teachers tends to inhibit professional decision-making ; there is too much emphasis on teacher evaluation, on the individual classroom, and on the course or grade as the only unit through which instructional improvement can be made. Little account is taken of the fact that educational objectives cut across the traditional boundaries of school organization and that teachers must act in coordinated groups to develop and implement instructional programs and assess whether they achieve the objectives.
In short, when it comes to making decisions about school programs, the authority of the teachers is far too restricted.

Fig. 1
Educational Program Structure for a School System

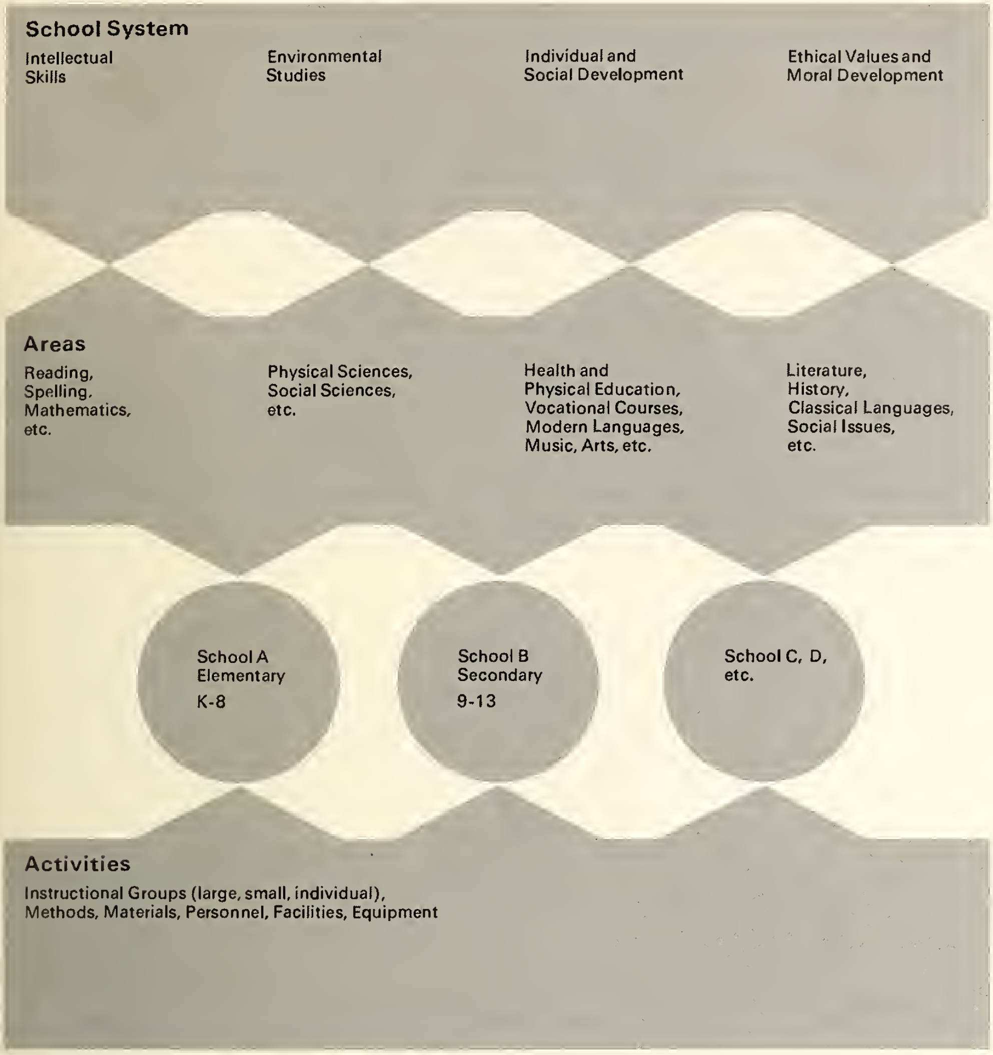
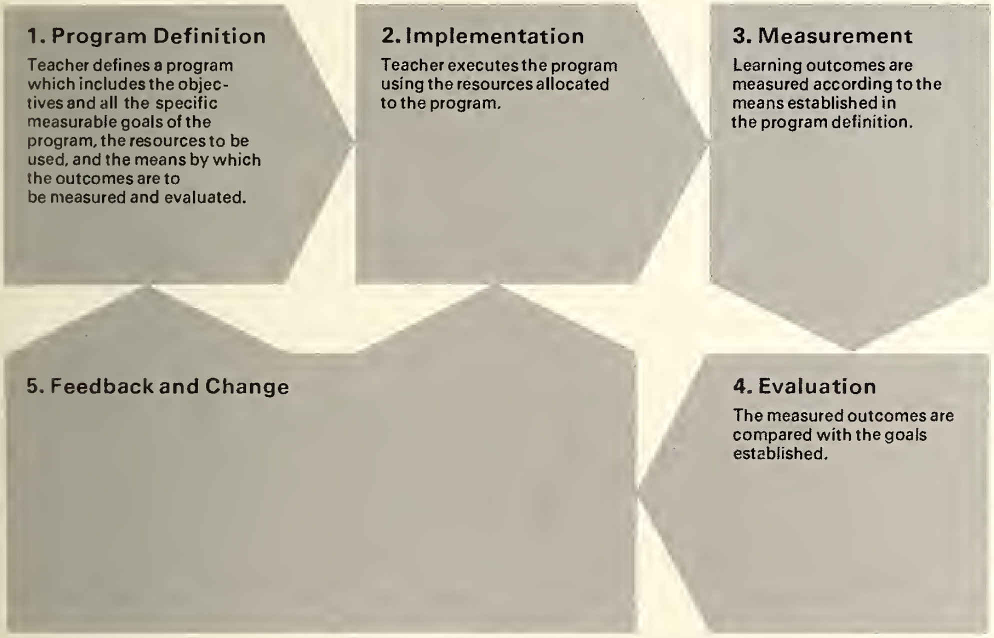

School System
Intellectual Skills
Environmental Studies
Individual and Social Development
Ethical Values and Moral Development
Areas
Reading, Spelling, Mathematics, etc.
Physical Sciences, Social Sciences, etc.
Health and Physical Education, Vocational Courses, Modern Languages, Music, Arts, etc.
Literature, History, Classical Languages, Social Issues, etc.
School A Elementary K-8
School B Secondary 9-13
School C, D, etc.
Activities
Instructional Groups (large, small, individual), Methods, Materials, Personnel, Facilities, Equipment

Fig. 2
A Model for Program Development


1. Program Definition
Teacher defines a program which includes the objectives and all the specific measurable goals of the program, the resources to be used, and the means by which the outcomes are to be measured and evaluated.
2. Implementation
Teacher executes the program using the resources allocated to the program.
3. Measurement
Learning outcomes are measured according to the means established in the program definition.
4. Evaluation
The measured outcomes are compared with the goals established.
5. Feedback and Change

New curricula, media, methods, and materials have increased rapidly in number and variety in recent years. These new designs for instruction confront schools with some difficult choices. There are many innovations a school might adopt to improve its reading program, for example. Evidence from research indicates that the 'initial teaching alphabet' yields results superior to traditional methods and that conceptual-skill-building programs increase readiness to learn, particularly among disadvantaged children.
Non-graded organization and the use of teacher aides are other innovations often advocated for improving reading programs.

If schools are to make productive use of these and other innovations, they must develop the capacity to consider them jointly and to select from the wide range of possible combinations those which maximize program effectiveness.
The challenge for the school is not to select promising innovations from those available but to develop a program combining several innovations and to demonstrate its superiority over other possible combinations. In developing their own programs within the larger framework defined by the school system, individual schools must make decisions about methods, materials, technology, and instructional organization. They must define activities to achieve program goals and allocate resources to support them (see fig. 1). In this context, each school's programs can contribute to the broader school-system programs (there is room for interplay) while differing from the programs of other schools according to the kind of school it is, the needs of its pupils, and the characteristics of the community it serves.

School program development

Figure 2 illustrates a five-step model of program development. Although broad objectives and minimum performance standards come from the school-system programs, each school must establish its own goals and standards relative to the needs and capabilities of its pupils and the surrounding community. Thus, in step 1, teachers define specific goals for their programs, instructional methods for achieving these goals, and criteria for assessing their effectiveness. In this phase

Fig. 3
Activity Descriptors for Program Development

1. Resource Factors
a) type, quantity, and cost of resources used
b) constraints : minima and maxima
2. Instructional Organization
a) organizational level at which activity occurs
b) unit, grade, or division
c) preschool, elementary, secondary
3. Management Identifiers
a) organizational unit responsible for the activity
4. Program Affiliation
a) program or sub-program
b) objectives of program
5. Student Characteristics
a) age, maturity, estimated intelligence
b) social background
c) language background
6. Evaluation Criteria
a) achievement data
b) teacher, pupil, or community satisfaction
c) success in other programs

Fig. 4
Examples of Data Required
in the Resource Factor Descriptor

1. Activity Type
a) classroom
b) laboratory
c) field
d) other
2. Time
a) hours/session
b) sessions/week, month, term
c) duration
3. Group Size
a) minimum, maximum, and desired pupils/section
b) minimum not equal to zero
4. Staff
a) number/section
b) staff/pupil ratio
c) kinds of staff : specialist,
teacher, aides, administrative
5. Space : Type and Size
a) classroom
b) laboratory
c) library
d) gymnasium
e) office
f) other
6. Equipment and Materials
a) books and other learning materials
b) films and projectors
c) video and sound equipment
d) terminals or other electronic equipment
e) other

of program development, materials, facilities, methods, and evaluative procedures are combined into a program design. Following this process of program definition, the program design is implemented in step 2 and its effectiveness is measured in step 3. In steps 4 and 5, the program is assessed and the design modified to improve effectiveness. In this way the school can experiment with various programs to discover those combinations of methods, facilities, and organization which best serve its pupils and the goals it has set. This process may also lead to a redefinition of goals.

Such a model of program development not only provides a framework for assessing and improving individual school programs but also yields information useful both for improving school-system programs and for providing an educationally relevant basis for determining budgets.

Managing program development

While the model of program development outlined in the previous section is simple, its implementation in schools poses a number of difficulties. Perhaps the greatest of these is the difficulty of selecting program designs and relating the cost to objectives and measures of effectiveness.

As indicated earlier, the instructional materials and methods now available can be combined into programs in an infinite number of ways, and each program will vary in cost and effectiveness. But no school can test all or even most of the program designs possible ; nor can it easily analyze cost and effectiveness data to select that program which is best adapted to its needs. Such problems can be solved, however, by simulating school programs and analyzing the data with computers.

Since activities are the basic building blocks of school programs, simulation requires precise descriptions of these activities in terms of the resources they expend, the programs they support, and their effectiveness in contributing to program objectives. Once activities are so described, they can be combined in various ways to create hypothetical program structures. Schools can then feed these simulated program structures into computers and, from the results, predict the effect of various program designs and select quickly the most promising from among many possibilities.

Figure 3 shows six descriptors, or dimensions, of activities. These dimensions provide a basis for combining activities into simulated programs and for assessing the characteristics of the programs – their cost, organizational implications and effectiveness. Each descriptor carries considerable information about the activity. The complexity of this information is suggested in figure 4, which details the data required for the resource descriptor.

The scope and cost of simulation systems place them beyond the resources usually available to schools but not beyond the reach of school systems. Most large school systems have either their own computer or ready access to one. Though some are used for keeping school records and for instruction, many of these facilities are confined to the reporting and processing of financial data. My argument is that they should be used to assist program development and the costing of program development. The simulation concept provides both a stimulus for change and a mechanism for controlling it by enabling schools to ask a range of probing questions about their own programs, such as :

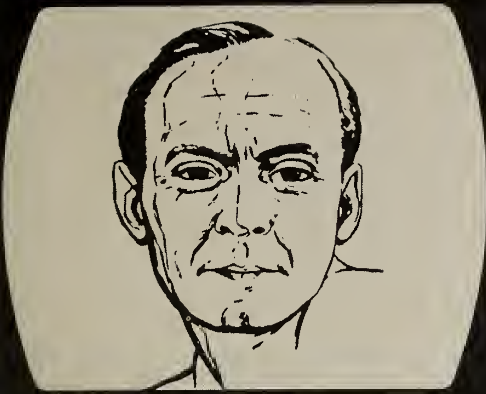
How would selected changes in teacher/pupil ratio, instructional materials, and organization affect the cost of the school's reading program ?

Which of these possible arrangements will lead to the greatest improvement in reading achievement ? Does it actually do so when implemented ?

Which pupils benefit least from the school's reading program, and what are their characteristics in terms of age, maturity, and family background ? What other programs might benefit these pupils more ?

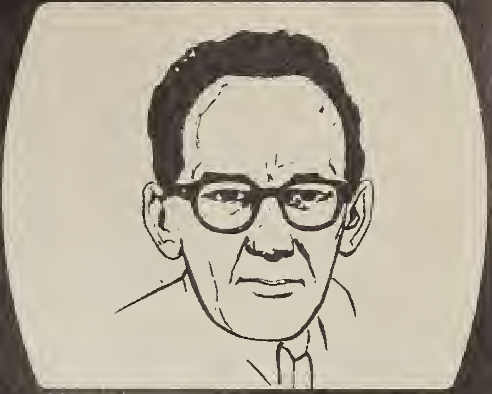
While these questions pertain to a single area in a school program, they should suggest similar questions which schools need answered in other areas.

The task of program development is an awesome responsibility, and we need all the help we can get. What I have set out here is, admittedly, an ideal structure that may seem far removed from the hurly-burly of the classroom. Nevertheless, it is only by formulating some basic framework of this kind that new educational programs can be introduced smoothly.

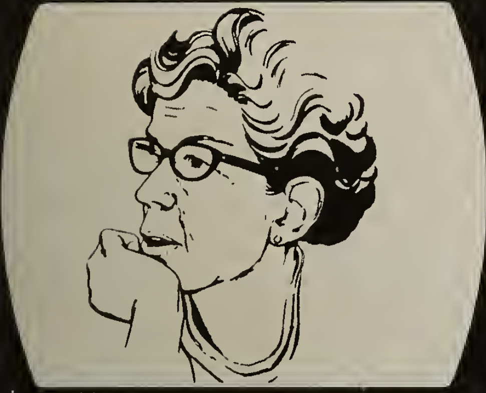


Birney

Livesay



Mandel

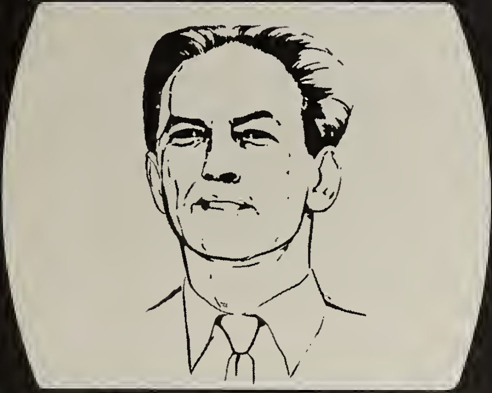


Waddington

Scott

MacEwen

Souster



Purdy

Layton

Canadian Poets on Tape

'A poem,' says Earle Birney, 'is a poet speaking to you out of the depth of himself, out of his own unique experience of life, and in a tone of voice and habit of phrasing which is peculiarly his own. A good poem is the most genuine expression of the whole personality of the man or woman who made it, and for that reason alone it can bring extraordinary insights into a human mind and heart.'

Earle Birney is one of nine major Canadian poets just recorded in the *Canadian Poets on Tape* series; Dorothy Livesay, Eli Mandel, Miriam Waddington, F.R. Scott, Gwendolyn MacEwen, Raymond Souster, Al Purdy, and Irving Layton are the others. Each is on a separate half-hour tape, reading his own poems, talking about the making of them, about his or her life and work, and about Canadian poetry in relation to contemporary life in this country. These nine half-hour programs contain the most listenable and meaningful recorded performances of Canadian poetry available.

Here for the first time, for most teachers and students, are the poets' own conversational comments on the writing of such poems as Earle Birney's 'The Bear on the Delhi Road,' Dorothy Livesay's 'Bartok and the Geranium,' and Irving Layton's 'The Bull Calf.' Poetry, in the schools, has often been handled either as a holy object, demanding extreme and distant veneration, or as a puzzle, requiring parsing and paraphrasing. The nine writers in *Canadian Poets on Tape* speak to us warmly and simply as persons: not as holy men or academicians. We are fortunate in that all the poets are experienced at making their art plainly accessible to students. The tapes were produced by Earle Toppings of OISE's Editorial Division, who worked with a number of the poets when he was editor of general books at The Ryerson Press.

Price is $45 for the complete set of nine tapes or $5 for individual tapes (please list names of poets) from Publications Sales, OISE, 102 Bloor West, Toronto 181.

Starting a Flexible Learning Program

at Woodlands Centennial Public School

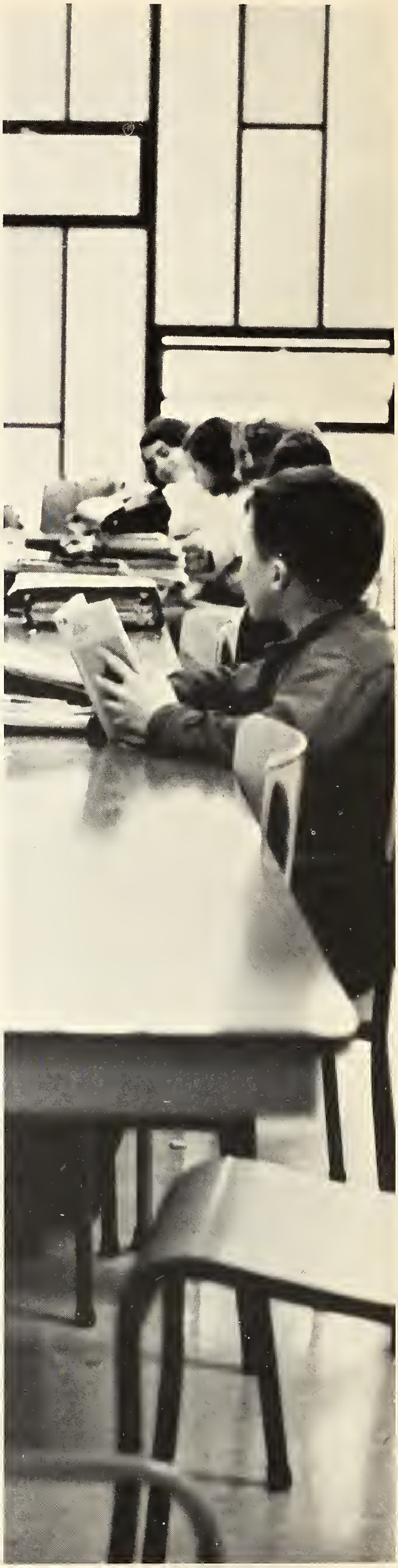
John Herriot, Department of
Computer Applications, OISE
and Robert Weaver, Principal
Woodlands Centennial Public School

Woodlands Centennial Public School (a senior public school in Pickering) opened in September 1968. Several months earlier, Hugh Sellars and William Watt, staff appointees, had approached OISE for information about programmed instruction and its possible application to the individualization of the learning process. John Herriot, one of the authors of this article, undertook to assist them on the Institute's behalf.

Although programmed instruction can readily be geared to the student's rate of learning, its success depends on a suitable learning environment in which the teacher supplies the human element lacking in the machine. Too often when programmed instruction has been introduced into a school, such an environment has been absent and programmed instruction has failed. We therefore decided that significant progress at Woodlands depended upon completely rethinking the logistics of the learning process, taking programmed instruction simply as one of many types of learning method to be considered. In our rethinking, the teacher became the medium *par excellence* through which learning was encouraged; the students became active participants in the learning process; and the timetable was envisaged as a broad and flexible schedule that might eventually become a non-essential.

With such concepts as a basis for discussion, we held a workshop for those few members of the Woodlands staff who were to be involved in the project when the school opened. Three teachers from the local high school attended, and K. D. Munroe, director of what was then the Pickering Board, was a frequent visitor. Our discussions about ways of dealing with children and allowing them to deal with themselves led us to an analysis of learning situations or 'modes.' We categorized these modes on the basis of the number of students per teacher, as outlined below:

1 :1 student – The tutorial or counselling session.
1 :2 – 5 students – The group may be selected by the teacher or may select itself as a result of the work it is doing. Prime instruction, remedial work, or straight discussion can bring about teacher-student interaction as long as the teacher avoids the mechanical and the stereotyped.
1 :6 – 10 students – and
1 :11 – 20 students – The possibilities with these two modes are limitless, and



will vary according to the teacher.
1 :21 – 50 students – The size of class that is common in schools. However, the mere fact that the class is no longer the exclusive mode of instruction is likely to bring about a change in the kind of interaction between teacher and students.
1 :51 – 100 students – Rare. Most teachers shy away from it.
1 : over 100 students – Even rarer, but must still be considered.

The modes in which teachers are involved are labelled 'direct.' Each direct mode has its counterpart 'indirect' mode where no teacher is present and the student interacts with some other medium — a book, film, or tape — or pursues some activity on his own. Thus, while the number of students for whom the teacher is responsible may remain constant, he is not obliged to be in direct control of all of them at the same moment.

The next consideration of the workshop was structure versus non-structure. It is known that some students cannot function adequately without a highly structured program, while others are quite capable of working responsibly on their own. It is wrong, however, to assume that a student belongs to either one category or the other for the whole of his school years. A student sways back and forth between two extremes, depending on what he is doing, why he is doing it, and how well he is doing.

Following on from these ideas, we identified the orders or structural patterns below :

Order one – The student is assigned work to be done in a given amount of time to produce a given result. There is no choice.
Order two – Allowance is made for the rate of learning of the individual student ; he may take whatever time he requires to complete the assignment.
Order three – Recognition is given to the fact that the student may have ideas about the subject he wishes to study. He makes his choice, but is required to accomplish specific tasks in a given amount of time.

Further orders are merely permutations of these basic patterns and several may be present in one class at the same time. This provides for a wide variety, from highly structured to relatively unstructured learning situations, so that each student's needs are met. After all, education is compulsory. It is incumbent upon each school to provide for individual traits and make use of them – not to destroy them. The alternative – to provide

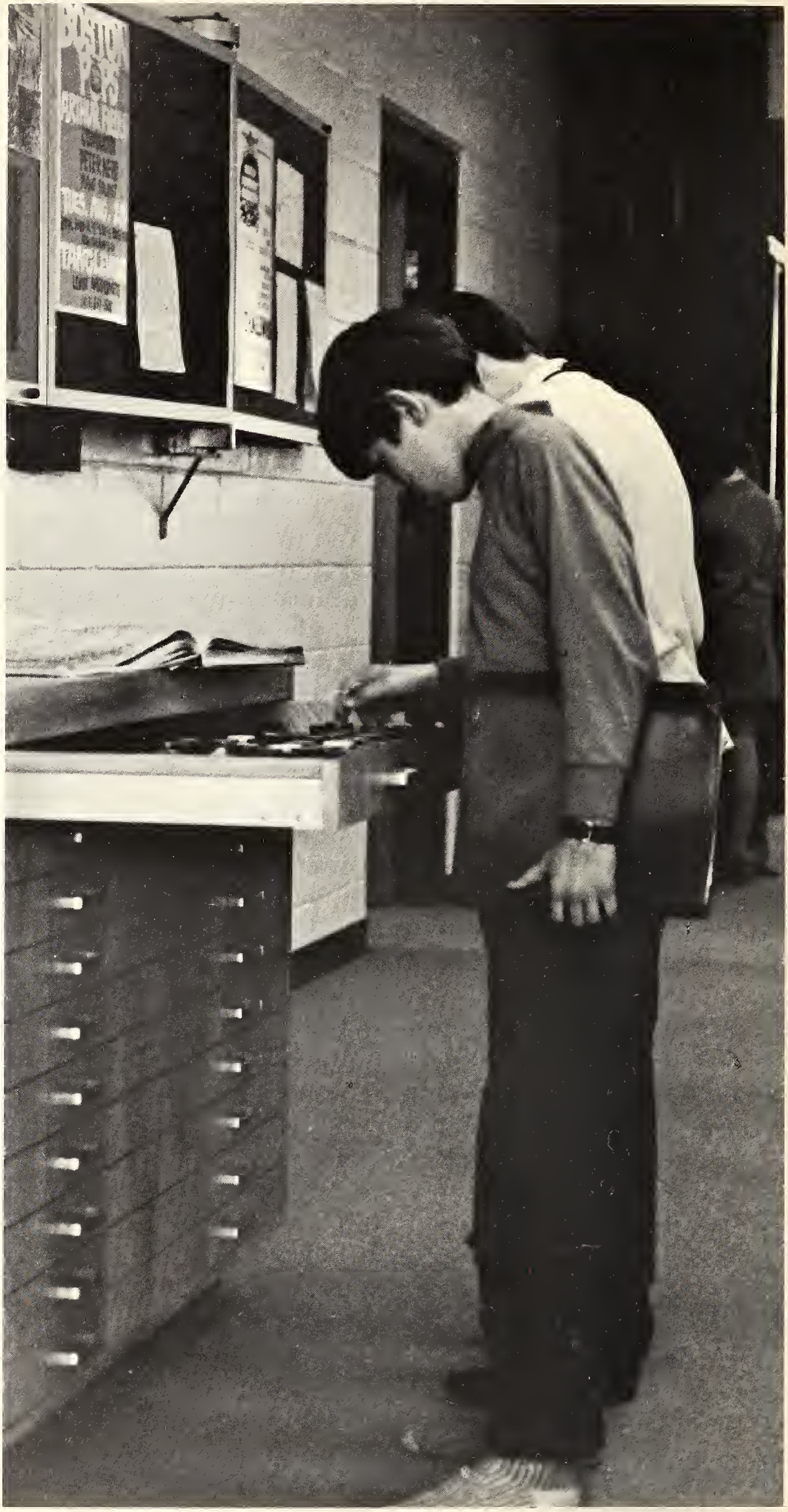
different kinds of school for different kinds of individual – is begging the question and, as well, is likely to create grave social problems. One of the main purposes of education is to foster the fruitful interaction of all kinds of individual. This is the very basis of society. To segregate, on some pretext or other, is to undermine that society.

When Woodlands opened, plans developed during the workshop were introduced into a few areas of the school. In the beginning, the students were given a large measure of freedom, partly to produce a reaction. Structure was then provided in accordance with the dictates of student response.

Within four months, the entire school had reacted to the project – had adopted its ideas or rejected them, modified them or reblended them with old practices. This was as we had hoped. It had been our purpose not to impose a blueprint upon Woodlands but to offer a working outline. Even in the realm of flexible schools, the fact remains that no two can ever be alike, for each reflects the personal qualities of the specific environment from which its staff and students are drawn.

The Woodlands project has now become a fully integrated part of the entire school, and its advantages have quickly become apparent. Teachers discuss their students with greater freedom and objectivity. They find more time to meet with individual students and to learn more about them; and although their work is 'much more tiring,' it is 'very much more satisfying.' Students are encouraged to integrate subject matter, and an independent flexible unit has been formed by the staff, embracing geography, history, and science. The amount of work done at home by the students has proved truly phenomenal and is nearly always voluntary; the pressures, they say, are greater because they are working against themselves and not against other students. Problem children, too, have been contained without threatening the atmosphere, and case histories of certain students indicate that the system is producing remarkable results.

One school, one project – not sufficient to provide more than a guideline for successful innovation. But the time is ripe for intelligent change – change that can be effected only through direct involvement of a fully informed staff. From the standpoint of the Institute, the Woodlands experience has provided both challenge and fulfillment.



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Teaching Aids from the Community

The Ontario Department of Lands and Forests

Readers are reminded that, because of the high cost involved in the preparation of materials reviewed, requests should be made only when appropriate use is assured.

PUBLICATIONS

Some Department of Lands and Forests publications are priced to cover printing costs. Orders should include either title or code letters and numbers; where applicable, orders should also be accompanied by a cheque or money order payable to the Treasurer of Ontario. Publications are available from: Conservation Information Section, Department of Lands and Forests, Parliament Buildings, Toronto 182.

Fish and Wildlife

FW-1 Sport Fishes of Ontario –
colored chart ($1.00)
FW-2 Commercial Fishing in Ontario –
8 pp. – simple, descriptive text with photographs, diagrams, and charts
FW-5 Fur in Ontario –
12 pp. – illustrated outline of Ontario's fur industry
FW-6 Meet the Wildlife of Ontario's Outdoors –
32 pp. – text illustrated in color, describing 13 mammals and 17 birds ($0.35)
FW-15 Ontario Snakes –
36 pp. – text describing 15 species with black-and-white photography
FW-16 Fishes of Ontario –
300 pp., 26 color plates – complete story of fish and fishing in Ontario; keyed, indexed ($2.50)

Land and Water

LW-3 Ontario Resources Atlas –
33 11″ x 9″ flatfold maps – 1963 ($1.00)

Provincial Parks

PP-1 Provincial Parks of Ontario –
location and facilities
PP-2 Algonquin Provincial Park –
includes map and canoe routes
PP-4 Canoe Routes –
Quetico Provincial Park
PP-5 Quetico Provincial Park –
descriptive brochure
PP-7 Canoe Routes –
North Georgian Bay Recreational Reserve routes

Outdoor Recreation

OR-1 The Ontario Outdoorman's Manual –
tips on all aspects of camping, hunting, and fishing, including proper care of game and fish ($0.25)
OR-8 How to Survive in the Woods –
comprehensive leaflet on woodland survival
OR-10 The Scent of Death –
how the human touch may prove a death sentence to young or injured animals

History

H-1 Algonquin Story –
204 pp., 5 maps – story of the gradual development of Algonquin Park as a campsite and wildlife sanctuary ($2.50)
H-8 Arrayed-in-Wampum –
Indian legend in verse ($2.50)

Forests

F-1 The Forest Trees of Ontario –
120 pp. – illustrated guide to identification of 90 native trees and 45 imported species ($0.50)
F-3 The Forest Resources of Ontario –
résumé of areas, sizes, volumes, allowable cuts of Ontario forests (maps included)

Forest Industry

FI-1 Lumber in Ontario –
outline of the provincial lumber industry

Renewing Nature's Wealth –
A Centennial History of the Public Management of Lands, Forests and Wildlife in Ontario – 648 pp. – described as 'a history of rural Ontario expressed in terms of the impact made by a civilized people on the primitive wilderness,' this well-illustrated book is an authoritative record of our natural resources and their administration from earliest times. Detailed biography, abundant reference notes, and extensive index included ($9.50). Available from book stores or from Copp Clark Publishing Co., 517 Wellington St. W., Toronto 135.

PHOTOGRAPHS AND COLOR SLIDES

Views of fish, wildlife, forest trees, crown lands and waters are available in 8″ x 10″ black-and-white prints or 35 mm. color slides ($1.00 each)

FILMS

16 mm. in color and black-and-white. Department of Lands and Forests films are not available on a loan basis but will be shown at schools by members of the Department staff, who will also speak on the subject under consideration.

Since space does not permit more than a representative sampling of the films available, teachers are urged to outline their specific need or purpose when requesting a showing, so that Lands and Forests personnel may select the most appropriate material. A wide selection of films suitable for young children is included in the Lands and Forests film library.

Attention is drawn to the code number appearing at the left of the film title. Inquiries concerning any films listed must include both code number and title.

All arrangements for film showings and/or speakers are made directly with the Conservation Education Section, Department of Lands and Forests, Parliament Buildings, Toronto 182.

Natural Science

C-5 The Forest Grows –
10 minutes (color) – story of forest growth with an explanation of effects of temperature and rainfall
C-15 A Tree is a Living Thing –
11 minutes (color) – a high-powered microscope shows what happens in even the smallest cells of a tree
C-18 The Spruce Bog –
23 minutes (color) – time-lapse photography illustrates the growth and decay of vegetation and the formation of the forest floor
W-19 City of Wax –
10 minutes (black-and-white) – the activities of a bee colony
W-38 Nature's Half-Acre –
45 minutes (color) – birds, plants, and insects in the seasonal changes of nature
W-45 Realm of the Wild –
27 minutes (color) – the cycle of nature shown through food-and-hunt patterns of birds and animals
W-53 World in a Marsh –
22 minutes (color) – intimate glimpse (including underwater photography) of the habits and domestic life of creatures living in and around marshlands
W-54 Creatures of the Forest –
14 minutes (color) – shy and seldom seen Ontario birds and animals
W-57 Beaver Valley –
35 minutes (color) – the way of life of a variety of Canadian woodland animals
W-2 Ahmeek – The Forest Engineer –
28 minutes (color) – beaver trapping, the preparation of pelts and their use as traced by the Department of Lands and Forests
W-55 Shore and Water Birds –
14 minutes (color) – a nesting loon hatches her eggs in a setting filled with natural wonders
W-56 Wings of the Wild –
14 minutes (color) – the peculiar habits of birds, both rare and common
W-63 The Snakes of Ontario –
12 minutes (color) – snakes and their identification, habitats, and usefulness to man

Conservation

C-3 Conservation of Natural Resources –
10 minutes (black-and-white) – the disastrous results of wastage of natural resources, and an approach to prevention of waste
C-4 Conservation and the Balance of Nature –
10 minutes (color) – a critical examination of man's role in changing the existing balance in biological communities

Geology

M-15 Riches of the Earth –
17 minutes (color) – the development of Canada's underground resources through geological ages

Forest Management

FM-9 Springtime's Harvest –
22 minutes (color) – maple-syrup making, past and present
FM-5 Forests Forever –
25 minutes (color) – the importance of timber conservation and an outline of sensible forest management
FM-12 The House the Wasp Built –
17 minutes (color) – methods of writing from ancient times to the present, plus the development of the Canadian paper industry

Forest Protection

FP-14 A Fire Called Jeremiah –
35 minutes (color) – factual story of a forest fire and modern methods of control
FP-33 Your Forest Heritage –
18 minutes (color) – the non-commercial value of forests and fire prevention
M-13 No Longer Vanishing –
28 minutes (color) – the 20th-century Indian and the more active role he is assuming in the conduct of his own affairs and those of his country
M-31 Universe –
28 minutes (black-and-white) – a look beyond the known solar system into far regions of the sky
RF-9 Forests for the Future –
28 minutes (color) – complete story of Department of Lands and Forests reforestation
RF-10 Forest Regions of Canada –
18 minutes (color) – a Canada-wide survey of the forest industry
ST-7 Foresters –
14 minutes (color) – career-oriented film outlining forestry as a profession
W-12 Birds of Canada –
9 minutes (color) – three Canadian birds and their habitats
W-72 White-Tailed Deer –
26 minutes (color) – game management of the white-tailed deer
W-34 The Magnificent Canada Goose –
10 minutes (color) – the 'come-back' of the almost extinct Canada goose, with a look at other wildlife

Health and Physical Education

ST-1 Artificial Respiration –
10 minutes (black-and-white) – the Holger-Nielsen Method
S-33 On Top of the Pros –
10 minutes (color) – Johnny Unitas of the Baltimore Colts football team discusses the urgency of using proper safety equipment

Profile of a School 3

Kateri Tekakwitha, Wikwemikong Junior School

Three centuries ago, Kateri Tekakwitha, Lily of the Mohawks, lived out her twenty-four brief years in areas bordering the St. Lawrence River. Her ways were the ways of her people and their lot was hers, but the influence of the Jesuit Order led her to accept the Christian faith and to practice extreme piety and devotion. Two years before her death, love of the Church drew her permanently into its sanctuary. Such was her service and self-forgetfulness that years after her death she was described as the 'Protectress of Canada.'

Today, on Wikwemikong Reserve, Manitoulin Island, a small junior school bears her name, and across three-hundred years her spirit breathes through a program designed to perpetuate the culture of the Indian.

This specialized program embraces all 295 pupils, from prekindergarten and kindergarten to Grade 4. Below Grade 1, it is confined to generous use of the Ojibway tongue. From Grade 1 up, it occupies one teaching period a week. Instruction is provided by three Indian members of the ten-teacher staff, ably assisted by an Indian kindergarten assistant. Robert J. MacSweeney, Principal, describes the program objectives as follows:

'Through Indian history, legends, language and handicrafts, to effect identification of the pupils with their own culture and to nurture pride in their own people' (success in this endeavor is seen as a stimulant to their educational growth), and 'to preserve the purity of the Ojibway tongue and to keep it alive in these children.'

The program was introduced in 1967, despite questions concerning its right to compete for pupil time with such traditional subjects as reading and arithmetic. Two years of successful operation have more than justified its claims, and the growing self-confidence of the pupils is such that expansion of the program is now foreseen. Nothing in the regular curriculum is omitted and the pupils are competent and self-assured as they enter the next educational level.

The current philosophy of relating the school to the community it serves has found unique expression under Robert MacSweeney's guidance. Public-speaking contests, conducted for the first time in Ojibway, are popular with the pupils, who speak with fluency and enthusiasm before audiences of schoolmates, parents, and friends. These contests alone have been responsible for some near miracles in transforming sullen, uncommunicative children into poised, enthusiastic young people. The Kateri Tekakwitha experiment proudly acclaims one of its graduates as twice-winner of the Ojibway oratorical contests.

'Success?' says Mr. MacSweeney. 'Well, it depends on how your culture interprets that overrated word. For pupils, parents, and teachers, hearing the children speak fluently and clearly in the Ojibway language is a thrilling experience. But this is not the measure of success we are using. The well-being and favorable self-image of the pupils, their pride in their ability to speak fluently in both Ojibway and English, and their consciousness of Indian culture as a rich part of Canada's heritage spell success to those of us who are privileged to work with them.'